

ingress. House. B. H. KETCHUM  
on Merchant Marine & Fisheries

# COASTAL ZONE MANAGEMENT CONFERENCE

## HEARINGS BEFORE THE SUBCOMMITTEE ON OCEANOGRAPHY OF THE COMMITTEE ON MERCHANT MARINE AND FISHERIES HOUSE OF REPRESENTATIVES

NINETY-FIRST CONGRESS

FIRST SESSION

ON

The Washington, D.C., Conference on the Organization,  
Utilization, and Implementation of the Coastal Zones  
of the United States, Including the Great Lakes

October 28, 29, 1969

Serial No. 91-14

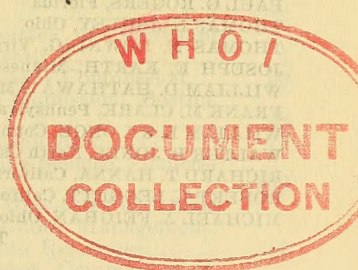
Printed for the use of the  
Committee on Merchant Marine and Fisheries



U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON : 1969

37-487



## COMMITTEE ON MERCHANT MARINE AND FISHERIES

EDWARD A. GARMATZ, Maryland, *Chairman*

LEONOR K. (MRS. JOHN B.) SULLIVAN, Missouri	WILLIAM S. MAILLIARD, California
FRANK M. CLARK, Pennsylvania	THOMAS M. PELLY, Washington
THOMAS L. ASHLEY, Ohio	CHARLES A. MOSHER, Ohio
JOHN D. DINGELL, Michigan	JAMES R. GROVER, Jr., New York
ALTON LENNON, North Carolina	HASTINGS KEITH, Massachusetts
THOMAS N. DOWNING, Virginia	G. ROBERT WATKINS, Pennsylvania
JAMES A. BYRNE, Pennsylvania	HENRY C. SCHADEBERG, Wisconsin
PAUL G. ROGERS, Florida	JOHN DELLENBACK, Oregon
FRANK A. STUBBLEFIELD, Kentucky	HOWARD W. POLLOCK, Alaska
JOHN M. MURPHY, New York	PHILIP E. RUPPE, Michigan
WILLIAM L. ST. ONGE, Connecticut	DANIEL E. BUTTON, New York
JOSEPH E. KARTH, Minnesota	GEORGE A. GOODLING, Pennsylvania
WILLIAM D. HATHAWAY, Maine	WILLIAM G. BRAY, Indiana
WALTER B. JONES, North Carolina	PAUL N. McCLOSKEY, Jr., California
RICHARD T. HANNA, California	LOUIS FREY, Jr., Florida
ROBERT L. LEGGETT, California	JACK H. McDONALD, Michigan
MICHAEL A. FEIGHAN, Ohio	
FRANK ANNUNZIO, Illinois	
SPEEDY O. LONG, Louisiana	
MARIO BIAGGI, New York	

ROBERT J. ABLES, *Chief Counsel*

BERNARD J. ZINCKE, *Counsel*

NED P. EVERETT, *Counsel*

ROBERT J. McELROY, *Chief Clerk*

RICHARD N. SHAROOD, *Minority Counsel*

---

## SUBCOMMITTEE ON OCEANOGRAPHY

ALTON LENNON, North Carolina, *Chairman*

PAUL G. ROGERS, Florida	CHARLES A. MOSHER, Ohio
THOMAS L. ASHLEY, Ohio	THOMAS M. PELLY, Washington
THOMAS N. DOWNING, Virginia	HASTINGS KEITH, Massachusetts
JOSEPH E. KARTH, Minnesota	HENRY C. SCHADEBERG, Wisconsin
WILLIAM D. HATHAWAY, Maine	JOHN DELLENBACK, Oregon
FRANK M. CLARK, Pennsylvania	HOWARD W. POLLOCK, Alaska
WILLIAM L. ST. ONGE, Connecticut	PHILIP E. RUPPE, Michigan
WALTER B. JONES, North Carolina	GEORGE A. GOODLING, Pennsylvania
RICHARD T. HANNA, California	LOUIS FREY, Jr., Florida
ROBERT L. LEGGETT, California	
MICHAEL A. FEIGHAN, Ohio	
THOMAS A. CLINGAN, Jr., <i>Counsel</i>	



## CONTENTS

Hearings held—	Page
October 28, 1969 .....	1
October 29, 1969 .....	83
Panel 1—A national program for coastal zone administration .....	5
Panel 2—The need and nature of land use regulation .....	20
Panel 3—Interstate and intrastate problems in coastal zone management .....	43
Panel 4—Federal and State roles in the coastal zone .....	61
Panel 5—The Federal focus of coastal zone management .....	83
Panel 6—Research requirements for coastal zone management .....	100
Panel 7—Federal action in the coastal zone .....	120
Panel moderators—	
Adams, Dr. David A. (panel 2) .....	20
Alexander Dr., Lewis M. (panel 5) .....	83
Chapman, Dr. W. M. (panel 7) .....	120
Clingan, Thomas A., Jr. (panel 4) .....	61
Fye, Dr. Paul M. (panel 6) .....	100
Sprague, George R. (panel 3) .....	43
Wenk, Dr. Edward, Jr. (panel 1) .....	5
Statement of—	
Abel, Dr. Robert, Director, National Sea-Grant Program, National Science Foundation .....	111
Beggs, Hon. James M., Under Secretary, Department of Transportation .....	130
Clotworthy, John H., chairman, Government Reorganization Committee, National Oceanography Association .....	84
Dolan, John H., executive director, California Advisory Commission on Marine and Coastal Resources .....	44
Doyle, Robert G., director of the Office of Science, Technology, and Mineral Resources, Maine Department of Economic Development; including an attachment .....	156
Duddleson, William J., director of policy studies, the Conservation Foundation .....	87
Garmatz, Hon. Edward A., chairman, Committee on Merchant Marine and Fisheries, U.S. House of Representatives .....	1
Goodsell, Leonard J., executive director, Great Lakes Commission .....	90
Gregg, R. Frank, New England River Basin Commission, Boston, Mass. ....	48
Haefele, Edwin T., Resources for the Future, Washington, D.C. ....	77
Hargis, William J., Jr., Virginia Institute of Marine Science, Gloucester Point, Va. ....	102
Knauss, Dr. John A., provost for marine affairs, University of Rhode Island, and former chairman, Panel on Coastal Zone Management, Commission on Marine Science, Engineering, and Resources .....	11
Lawrence, Dr. Samuel A., former executive director, Commission on Marine Science, Engineering, and Resources .....	7
Linton, Dr. Thomas L., North Carolina Department of Conservation and Development .....	25
McGuinness, Col. William V., U.S. Army Corps of Engineers .....	120
Porro, Alfred A., attorney at law, Lyndhurst, N.J. ....	61
Quarles, John R., Assistant to Under Secretary for Environmental Planning, Department of the Interior .....	21
Rouse, Frederick O., Jr., chairman, Great Lakes Basin Commission, Ann Arbor, Mich. ....	152
Schwan, Charles F., Jr., Washington, D.C. ....	74
Sessums, Roy T., vice president, Freeport Sulphur Co., New Orleans, La. ....	31

## Statement of—Continued

	Page
Stewart, Dr. Harris B., Jr., director, Atlantic Oceanographic Laboratories, ESSA.....	107
Train, Hon. Russell E., Under Secretary of the Department of the Interior.....	134
Tribus, Hon. Myron, Assistant Secretary for Science and Technology, Department of Commerce.....	126
Wallace, David, director, Marine and Coastal Resources, State of New York.....	53
Wenk, Dr. Edward Jr., executive secretary, National Council on Marine Resources and Engineering Development.....	15
Additional information supplied by—	
Agnew, Hon. Spiro T., document outlining a 5-point interim marine science program.....	167
Bissell, Harold, executive secretary, California Interagency Council for Ocean Resources, document entitled, "Coastal Zone Management in California".....	154
Clingan, Thomas—Attendance list at Coastal Zone Management Conference.....	149
Krueger, Robert B., letter dated November 18, 1969, enclosing the proceedings of the Sixth Meeting of the California Advisory Commission on Marine and Coastal Resources; a resolution; biography; and a bibliography.....	195
Morr, Fred E., Director, Ohio Department of Natural Resources, letter dated October 31, 1969 enclosing a speech.....	159
New England River Basins Commission, a study dated May 1969.....	170
Sessums, Roy T., article from the Louisiana Conservationist, Louisiana Wild Life and Fisheries Commission, September-October 1968.....	33
Stewart, Dr. Harris B., Jr., director, ESSA Atlantic Oceanographic and Meteorological Laboratories, Miami, Fla., address given October 6, 1969.....	163
Texas Coastal Resources Plan, dated October 27, 1969, with 7 attachments.....	178
Washington, State of, Seacoast Management Act.....	175



## COASTAL ZONE MANAGEMENT CONFERENCE

---

TUESDAY, OCTOBER 28, 1969

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON OCEANOGRAPHY OF THE COMMITTEE ON  
MERCHANT MARINE AND FISHERIES,  
*Washington, D.C.*

The subcommittee met at 9:40 a.m., pursuant to call, in the Caucus Room, Cannon House Office Building, Hon. Alton Lennon (chairman of the subcommittee), presiding.

Present: Representatives Lennon, Garmatz, Rogers, Downing, Karth, St. Onge, Feighan, Mosher, Pelly, Keith, Schadeberg, Dellenback, and Goodling.

Staff Members Present: Thomas A. Clingan, Jr., counsel, Robert J. Ables, chief counsel, and Robert J. McElroy, chief clerk.

MR. LENNON. May I have your attention, please. Ladies and gentlemen, I want to open by extending to all of you a very cordial and hearty welcome.

We are delighted and honored to have you, ladies and gentlemen, with us this morning. It is my pleasure now to present to you the distinguished Chairman of the Merchant Marine and Fisheries Committee for his welcome. This distinguished gentleman has been a member of this committee since back in the forties, and he was the ranking majority member for a great many years of that time.

He became chairman of this committee on January 10, 1966.

I think it would be interesting to you, ladies and gentlemen, to know the wide spectrum of legislative authorization jurisdiction that this committee has. Chairman Garmatz, the chairman of the full committee, has under his direct supervision and control, the Subcommittee on Merchant Marine, the Subcommittee on Fisheries and Wildlife Conservation, the Subcommittee on Coast Guard, Geodetic Survey, and Navigation, the Subcommittee on Panama Canal, the Subcommittee on Oceanography, and the Subcommittee on Maritime Education and Training.

It is my great pleasure now, ladies and gentlemen, to present to you our distinguished Chairman, the Honorable Edward A. Garmatz.

### STATEMENT OF HON. EDWARD A. GARMATZ, CHAIRMAN, COMMITTEE ON MERCHANT MARINE AND FISHERIES, U.S. HOUSE OF REPRESENTATIVES

MR. GARMATZ. Thank you very much.

Ladies and Gentlemen. Mr. Lennon, your program chairman for this conference, tells me that we are honored by the presence of many distinguished representatives of our coastal and Great Lakes States and



the Commonwealth of Puerto Rico. I wish to take this opportunity to welcome each of you to our Nation's capital. I suspect that your interest in coastal zone management is much the same as that of my State—Maryland—because of our borders on the Chesapeake Bay, one of the Nation's great estuaries. And for that reason, I am particularly pleased to note that Mr. Sachs and Mr. Capper, from the Maryland Department of Natural Resources, are present here this morning.

It is my pleasure to open the Conference on Coastal Zone Management. As you know, the Committee on Merchant Marine and Fisheries has taken an active interest in learning how man should respond to the complex problems in the zone where the land meets the sea.

We know that as population crowds coastal areas, pollution of rivers and estuaries increases. Recreation space for urban centers becomes scarce. Location of industry in near proximity to transportation calls for large portions of coastal land for factories and port facilities. Yet, at the same time, space must be reserved to insure protection of breeding grounds for fish and waterfowl, and also for public use.

Some uses of the coastal zones are compatible. What we need is the machinery in government to tell us which uses can live together in the same space. Where different uses cannot be accommodated, we need the means to make a logical selection among them.

We believe, as did the Commission on Marine Science, Engineering, and Development, that the problems of our coastal zones can be solved only by the people most directly affected. The States and the municipalities, through their normal political processes, must remain the focus for coastal planning.

The Congress and the executive branch cannot successfully undertake this critical business. What the Federal Government can do, however, is to assist the States to do the job by providing for the coordination of State and Federal programs, and by assisting the States to form effective organizations for management, with adequate funding.

There are many ways that the Federal Government could become involved. There are different methods for funds to be distributed, and a multitude of possible guidelines for administration.

To begin the arduous task of sorting out these alternatives, we are turning to you. Mr. Lennon suggested that it would be helpful to convene this meeting to receive your viewpoints. While this is certainly an unusual way for a Congressional committee to proceed, I believe that it is a sound and productive way to gather and distill new information.

I look forward to receiving the benefit of your knowledge. I welcome you to this important conference, and assure you of our strong and continuing interest.

I would like to turn the program over at this time to my colleague, Congressman Lennon. As chairman of the Subcommittee on Oceanography, he has worked tirelessly to bring a truly national program of the oceans into reality. This conference is an example of his energy, and I might add here, that of his right arm, Thomas A. Clingan, professor and many other titles, but familiarly known to our colleagues and to the staff as Tom.

Mr. Lennon will also introduce to you his colleagues, who are present. I hope that you will find this meeting to be productive and worthwhile and I want to personally thank you for coming.



Mr. LENNON. Thank you, Mr. Chairman, for your words of welcome. I think some of you gentlemen know that there are 23 legislative committees in the U.S. House of Representatives. Each of those major legislative committees has an average of six to eight subcommittees. Some of us serve on as many as eight or nine subcommittees.

They meet at the same time. For that reason this morning rather than following, which I intended to do, the remarks by the distinguished chairman of the full committee, it will be my pleasure at this time to introduce those members of the Subcommittee on Oceanography, who are present.

At least five members of the subcommittee have contacted me this morning to express their regrets that they could not be here to extend a welcome.

So, as I call the names of those members of the subcommittee who are here, I would appreciate if you would stand and you gentlemen can withhold your applause until all have been introduced.

The Honorable Paul Rogers of Florida. The Honorable Thomas Downing of Virginia. The Honorable Joseph Karth of Minnesota. The Honorable William L. St. Onge of Connecticut, and I believe that is the extent on the right side of the aisle.

I will withhold the introduction of a subsequent speaker. The Honorable Thomas M. Pelly of Washington. The Honorable Hastings Keith of Massachusetts. The Honorable Henry Schadeberg of Wisconsin. The Honorable John Dellenback of Oregon. The Honorable George Goodling of Pennsylvania. The Honorable Louis Frey of the State of Florida.

Thank you, gentlemen.

(Applause.)

Mr. LENNON. Now, at this time, I would like to add my own words of welcome to those that have already been expressed. The opportunity for us to meet and exchange ideas with people from as many different States as we have here is indeed a rare and unique privilege. I might say to you gentlemen, that this is an innovation for a conference to be sponsored by a legislative committee or a legislative subcommittee.

It is usually done at the executive level of our Government, but we simply cannot wait. I am enthusiastic that the ideas developed here will be of great assistance to us in our efforts to create meaningful programs for the coastal zones. I am certain that all of you share with me and my colleagues a sense of your general situation in dealing with the problems of our coastal waters. The reason for urgency was properly identified by the Marine Science Commission report, which I hope most of you have read, particularly that relating to the coastal zone recommendations, which stated as follows:

Today, man's damage to the environment too often is ignored because of immediate economic advantage. To maximize the present economy at the expense of the future is to perpetuate the pattern of previous generations, whose sins against the planet we have inherited.

If adequately protected, the sea and shoreline can provide unique and valuable opportunities for recreation. The growth of the country's population, most pronounced in urban areas along the shoreline, and the increased wealth and leisure of many of our people, are creating inexorable pressures for access to the sea. Contamination or destruction of beach, marsh, waterway, and shoreline aggravates these pressures by denying use of the sea and shore to a growing population.



I don't have to remind you, ladies and gentlemen, that this same admonition applies equally to our Great Lakes.

Against this background, the Congress is being asked to move toward the establishment of a more rational management system. While we are armed with excellent studies and recommendations from several sources on management and development of the coastal zone, we have found that there are many unanswered questions as to how those recommendations are to be translated into specific legislative language, either at the State or Federal level.

For this reason we have invited you to this conference and through this proceeding, contacts and discussion, we hope to obtain information that will lead us one step further, and perhaps it will be a jumbo step, toward developing a sound management system.

It is significant that represented in this room are a number of different points of view. I am cognizant of that.

We are honored with the presence of people from the coastal and Great Lakes States representing a wide variety of governmental functions. We have persons who are familiar with the specific problem of small subdivisions. Others have already come to grips with the broad coordinating problem of interstate and regional organization.

We have people from universities, research institutions, and industries. We also have distinguished members of the executive branch of the Federal Government. We welcome them here too.

Some States have already studied or are in the process of studying their coastal zone problems and their contributions will be most important to this conference. We believe too, ladies and gentlemen, that there is a goal to be attained, simply by bringing this group together, as part of an educational process for what each of you can contribute to one another's understanding of mutually conflicting interests.

Second, we have asked you to come to educate us, to assist us in wrestling with some of the questions of policy and detail that are plaguing us. Your collective wisdom and judgment will be valuable to the legislative input. For this reason we will raise some of the broadest and most penetrating questions about what we are all here about, the coastal zone.

In the interests of time, I will not attempt to enumerate the many coastal zone problems that will be considered, but I want you, ladies and gentlemen, to know that the Oceanography Subcommittee, and each and every member thereof is vitally interested in these problems and is determined, if humanly possible, with your help, to move ahead to solutions.

On behalf of the subcommittee, I welcome you and wish you well in your endeavors and want you to know that we appreciate your interest, your time, your dedicated assistance.

Now, in closing, I want to stress and make crystal clear one point: in all of the deliberations of this subcommittee, which go back almost 11 years, the Subcommittee on Oceanography has always acted in a completely bipartisan manner. It is significantly acting the same way now. I think it would be interesting to you, ladies and gentlemen, to know that every single member of this subcommittee joined in the sponsorship of the legislation that was introduced to implement the Stratton Commission report relative to Government structure. For we are interested, I assure you, solely in what is best for your and all our national interests.



In this spirit of unanimity, I would like to call upon my good friend, Charlie Mosher, the ranking minority member of our subcommittee, for his always distinguished and eloquent comment.

MR. MOSHER. Thank you, Mr. Chairman. I know that speaking for the minority members of the subcommittee, I can say all of us join with Mr. Garmatz and Mr. Lennon in their opening remarks and we want to be associated completely with them. I will make no attempt to expand on the comments of our distinguished chairman. However, I would like to reiterate what Mr. Lennon has said—that in all the deliberations of this subcommittee we have acted on a completely bipartisan basis.

I think this is due in part to the subject matter, which as yet has not lent itself to partisanship. And I hope it will not in the future. But I think I should say that this unanimity of action also is in part due to the great fairness of our chairman, Mr. Lennon, and his generosity in equal treatment of the minority members and the majority members, and we certainly appreciate that, Mr. Lennon.

I know that are many Republicans here representing States. Being cognizant of the fact that the majority of State governments now are Republican controlled, I hope that we have a majority of Republicans here in this group. I ask you as a fellow Republican, not to be too rough on the other party, and that you, too, act and discuss on a bipartisan basis.

Mr. Chairman, I am tempted to add one other remarks as a representative of one of the Great Lakes States. It happens that my district borders on Lake Erie of which some of you have heard. As a representative of a Great Lakes States, I might say to this group that one of the points that we in the Congress who represent the Great Lakes area constantly make, is that, by definition, the Great Lakes must continue to be considered as an equal participant in all of the coastal zone efforts of the Nation.

Therefore, I think it is completely appropriate that most of the Great Lakes States be represented here.

Mr. Chairman, thank you for this opportunity to say a word of welcome. We wish on this side complete success to your conference.

MR. LENNON. Thank you, Mr. Mosher. I wish it were possible for each of the members of the subcommittee to express his personal appreciation to the respective representatives from his respective State, but we don't want to spend a lot of time talking from this level.

We want to hear from you.

Now, I am going to ask the counsel of the committee, Thomas Clingan to kick the conference off with the first panelists and moderator. I really do believe, ladies and gentlemen, that this innovation, this new approach that we are taking, is going to be helpful to us in our sincere efforts to accomplish something really worthwhile. Thank you very much.

MR. CLINGAN. I will now call, if I may, Dr. Edward Wenk to come forward and bring his panel to start the day's proceeding.

#### PANEL 1—A NATIONAL PROGRAM FOR COASTAL ZONE ADMINISTRATION

##### Moderator

Dr. Edward Wenk, Jr., executive secretary, National Council on Marine Resources and Engineering Development.



## PANELISTS

Dr. Samuel A. Lawrence, former Executive Director, Commission on Marine Science, Engineering and Resources; Dr. John Knauss, provost for marine affairs, University of Rhode Island, and former chairman, Panel on Coastal Zone Management, Commission on Marine Science, Engineering and Resources.

Dr. WENK. Ladies and gentlemen, before introducing the members of this panel and proceeding with the implementation of your part in the proceedings, I would like to express appreciation to the chairman of this committee and to Chairman Lennon of this subcommittee for their courtesy in inviting representatives of the executive branch to this meeting.

I believe this hospitality reflects another dimension of marine affairs. It has been bipartisan as Mr. Lennon has said, but there has also been a unanimity of view, although not always simultaneously on the two sides of Washington, that the oceans are important to this Nation and to its people.

I want to say on the part of the Vice President and the Marine Sciences Council that we applaud the initiative of this committee in calling this meeting. We are pleased to see this attendance, because as I will mention shortly, this interest in coastal matters takes on meaning only in partnership with the States.

May I also go on to say that this meeting and those attending it reflect a major, and I believe profound, change in marine affairs. A few years ago there was interest in the oceans on the part of a small but eloquent group of scientists and they, working very hard, called attention to the potential of the sea to our legislators.

The most important act, I believe, that has been legislated in recent years began with this committee and became a matter of law in 1966, which, apart from the machinery that set up the Commission and the Council about which you have heard, for the first time established a mandate, a mandate to this Nation that it pay attention to the sea.

Now, we are beginning to see the fruits of that mandate and we are seeing that not only are oceanographers interested in the oceans, but others as well: industrialists, bankers, economists, lawyers, executives in State government, your Governors, and at the policy level in Washington, the Cabinet Officers, the Vice President and the President.

Indeed, this is a major transition and it characterized by one further consideration and that is a determination to overcome this past neglect.

Once I referred to the oceans and the inshore areas as our 51st State. I also had the occasion to remark that sadly enough nobody lives there and any representation that it may have either in Government or in public affairs has had to be by proxy.

So, beginning at this moment, I should like to ask each of you to assume an additional identity if you will, and I invite our panelists to do it as well, as residents of that 51st State.

The story that you are going to hear in this short interval this morning is one of problem identification and problem solution, and it is not often in the affairs of Government that people live long enough to see both things happen. But as you will hear from your two panelists, and subsequently from your moderator, this has happened, talking about a concern now for the coastal zone.



I would like to call as the first panelist, Dr. Samuel Lawrence, who, as everyone knows, has been Executive Director of the Marine Science Commission. Professionally he received his education at Harvard University, his doctorate at American University in political science. He became associated with the Bureau of the Budget in 1954 and remained there until 1967 when he assumed the role as staff director for the Commission.

That service was broken by a 1-year sabbatical when at Brookings Institution he prepared a book, perhaps his first professional emersion in the sea, this one dealing with the U.S. Merchant Marine. It must be something of a labor of love because Sam, after leaving the Commission has returned to the Merchant Marine, and he is well on the way with his second book.

**STATEMENT OF DR. SAMUEL A. LAWRENCE, FORMER EXECUTIVE DIRECTOR, COMMISSION ON MARINE SCIENCE, ENGINEERING, AND RESOURCES**

Dr. LAWRENCE. Thank you very much. It is good to be with you today to report the work of the Stratton Commission. I think we are now entering a period of the conference when we really are going to have some dialog. Both John Knauss and myself have designed our remarks to be very brief \* \* \* sufficient, we hope, to introduce those who have not already been thoroughly familiarized with the Commission materials to know what the background has been for these conferences and the problems which you are going to be discussing here.

We do want to have time so that there really will be some discussion and some questions.

It is always a pleasure for one who has been associated with an effort to see the recommendations emerging from it brought forward for public debate and action. There has been a great deal of action in the past several months when the commission filed its report with the Congress and the President. Draft legislation is now before the appropriate committees and subcommittees of both Houses of Congress; the administration only a week ago has announced its intention to take action through coastal zone management to support the creation of the coastal zone laboratories and move ahead with a pilot project for the restoration of the Great Lakes and I expect I may want to comment a little more on that myself.

At a recent Governors' Conference, I understand that a resolution was passed that there should be a marine States association which would provide a vehicle at the State level in considering mutual coordinating activities. Now we have this very useful forum provided by the Committee on Merchant Marine and Fisheries, the Subcommittee on Oceanography.

This gathering momentum of concern reflects very real and growing problems which vitally affect the people of our coastal States and indeed the entire Nation. You know them well. They include the urgent need to halt the deterioration of our Great Lakes and estuaries, provide more adequate seaside recreational opportunities, improve our ports, accommodate expanding industries seeking shoreline space, capitalize on opportunities to make more effective use of the water-

fronts of coastal cities, and protect our coastlines from accidental oil spills and other forms of pollution.

We need to establish a firmer legal framework for ownership and use of coastal and offshore lands. Above all, the commission concluded, the pressures for multiple use of these limited coastlands require an organized approach in order to coordinate the separate plans and activities of Federal, State, and local government agencies and of private corporations and persons.

Dr. Knauss in just a moment will amplify on the recommendations which were made by the commission in reference specifically to the coastal zone. Tom thought that it might be useful if I were to fill in the background on the commission's overall assignment and the manner in which it went about it in its proposal for a national ocean program.

The legislation which established the commission designated as Public Law 89-454, was enacted in June, 1966. This law set the overall policy framework for an expanded marine effort; called upon the President, aided by a Cabinet-level council, to make immediate improvements in the Federal Government's planning and programming for marine affairs; and provided that the President should appoint a public commission to provide a firmer basis for planning over the longer term. More specifically, Public Law 89-454 gave the commission four major tasks:

To examine the Nation's stake in the development, utilization, and preservation of our marine environment.

To review all current and contemplated marine activities and assess their adequacy in reference to the overall goals established in the 1966 act.

On the basis of these studies, to formulate a comprehensive, long-term national program for marine affairs, and finally—

To recommend a plan of Government organization for such a program's implementation, together with estimated costs.

The commission was a temporary body composed of 15 members under the chairmanship of Dr. Julius Stratton of the Ford Foundation and previously the president of Massachusetts Institute of Technology. Membership was drawn from Federal and State Governments, industry, and the universities, and it had a very broad geographical base. I think it was a truly representative commission. All of the members assumed their duties as commissioners in addition to their other responsibilities.

Yet it was a working commission, one that spent 2 to 4 days every month, and many of the members much more time than that, in preparing the studies and report.

The commission's final report to the President and the Congress was submitted last January after 2 years of intensive inquiry, expressed the commission's unanimous conclusion that the Nation's marine interests required major strengthening of existing programs and initiation of certain new activities (such as coastal management) under the leadership of a new National Oceanic and Atmospheric Agency.

Throughout its work, the commission enjoyed the close and cordial cooperation of the national council, yet the two bodies were independent of one another and each separately reached its own judgments



on matters within its purview. The commission also benefited significantly in having the support and help of four congressional advisers (two from the Senate and Mr. Lennon and Mr. Mosher appointed from the House), who generously make themselves available to advise and assist the commission in numerous ways, although refraining, per the statute, from participating directly in its work.

A large number of excellent studies and reports had preceded the formation of the commission and provided a secure foundation for its work. The assignment to the commission, however, extended well beyond the scope of all previous studies in requiring a searching and comprehensive review of the totality of the Nation's nonmilitary interests in the seas.

The commission interpreted its mandate broadly. Pursuant to the clear intent of Congress, it undertook to formulate a plan of national action, which would embrace the activities of local governments, international organizations, and the private sector as well as of Federal agencies.

Whereas previous reports had concentrated largely on scientific and technical matters, the commission looked to the whole range of the Nation's civil marine interests including resource development, environmental prediction, the maintenance of environmental quality, and on a more limited basis, recreation, transportation, and military uses of the oceans.

Its recommendations were directed to improving institutional frameworks as well as to advancing knowledge and improving technical capability to make more effective use of the oceans. A major portion of the commission's work, of course, was addressed to considering the most effective way to organize the very broad spectrum of persons and groups having a stake in marine affairs so as to mobilize effective action, not just within the Federal Establishment, but across the entire Nation.

One of the most important contributions made by the commission, in my mind, was its differentiation of three major zones of geographic interest within the overall plan. Whereas the science of oceanography had focused mainly on the deep oceans, and previous reports had reflected this view, the commission concluded that it was Nation's coasts, estuarine areas, and Great Lakes which presented the most urgent problems and the most immediate and tangible opportunities for improvement.

Development of the sea's resources, while conducted in a variety of environments, required improved technology and survey information chiefly at Continental Shelf depths, which defined a second zone. Beyond the shelves stretch the deep seas, of which present knowledge permits only limited use, and here the major tasks seemed to be exploration and scientific investigation and to establish a monitoring and prediction system to maintain watch over the coupled movements of the global air-sea envelope.

The commission conducted its basic investigations through seven panels, drawn from its membership and supported by staff and consultants. The reports of panels—dealing with marine science, technology, resource development, industrial and investment issues, environmental matters, education and training, and international law—provided the primary source material upon which the commission as a whole based its conclusions.



These reports have been published by the commission and constitute an extraordinary rich fund of information and analysis in these more specific fields. You have received copies of one of the volumes, but you might be interested to see all three. There are eight reports within the three volumes entitled, among others, "Science and Environment," "Industry," and "Technology."

In addition to these reports there were a number of other studies, some taken through contract and some by staff which have been made publicly available through the Federal Clearinghouse for Scientific and Technical Information and several may be of interest to this group. They are described at page 283 of the commission's report, "Our Nation and the Sea." Those are available if you would like to order them.

At the time that the Commission began its work, no one to my knowledge had yet coined the term "coastal zone" or formulated the concept that it represented a zone having unique characteristics or requiring a special approach. However, as the panel on environmental interactions, headed by Dr. Knauss, deepened its investigations it concluded that the scope of problems within its purview did not permit a single, unified approach. The scales of motion to be observed differed too greatly, the parties in interest were too diverse, and the problems to be addressed too varied to be covered in a single report.

Dr. Knauss accordingly proposed to the Commission that his panel prepare two reports: One dealing with systems for monitoring and prediction of the global environment and the second with management of the coastal zone. Undaunted by the complexity of its assignment, this panel plunged with really extraordinary energy and dedication into its task.

Over a period of roughly 1 year and supported by only two full-time staffs, Dr. Knauss and his associates held hearings throughout the country at which 126 witnesses presented formal statements. Over 600 additional persons were interviewed or supplied material by mail.

A conference organized by resources for the future provided additional inputs, as did the National Council Committee on the Coastal Zone and several Federal agencies. There were several staff and contract studies and monthly meetings of the panel to review materials and compare notes.

Finally, after all of this labor, the mass of material finally was distilled into two reports running some 300 pages, which I believe have gained recognition as the authoritative works in their fields.

I might mention that throughout this period, Dr. Knauss also was directing the marine program of the University of Rhode Island and dedicating 2 to 4 days each month to the meetings of the Commission as a whole. In sum, whether or not you may agree with the panel's findings, you must credit it with having turned in a truly remarkable job.

I would like to qualify our next panelist as a real expert and turn the microphone over to Dr. Knauss.

Dr. WENK. Thank you very much, Dr. Lawrence. Dr. Knauss is well-known in the field of oceanography and now has graduated to be well-known in the field of marine science affairs. He received his undergraduate degree at MIT and his graduate degrees at the University of Michigan and Scripps. He is world-renowned as a specialist in ocean



circulation. Dr. Knauss has been at the University of Rhode Island since 1962 as dean of the Graduate School of Oceanography, and for the past year now, in a new reflection by that university of the importance of the oceans, has been Provost for Marine Affairs. Dr. Knauss.

**STATEMENT OF DR. JOHN A. KNAUSS, PROVOST FOR MARINE AFFAIRS, UNIVERSITY OF RHODE ISLAND, AND FORMER CHAIRMAN, PANEL ON COASTAL ZONE MANAGEMENT, COMMISSION ON MARINE SCIENCE, ENGINEERING, AND RESOURCES**

Dr. KNAUSS. Thank you. "The coast of the United States is in many respects the Nation's most valuable geographic feature"—in this way the Commission on Marine Science, Engineering and Resources opened its discussion of the coastal zone. Sketched in the Commission report, Our Nation and the Sea, and rather fully elaborated in the report of the panel on Management and Development of the Coastal Zone are a variety of ways in which the shoreline and the coastal waters are being used.

Many of you have read these reports, and all of you are concerned with the coastal zone. There is no need for me to repeat, except insofar as I believe it useful to emphasize one major premise underlying our recommendations.

The premise is as follows: The uses of the coastal zone are increasing. This trend will continue and probably accelerate. The increasing pressure on the coastal zone is causing an increasing variety of management problems. Some uses of the coastal zone are in conflict and some uses may be incompatible with one another. As we look to the future, one can see that these management problems will increase.

**THE USES OF THE COASTAL ZONE**

The most intensive uses of the coastal zone occur at the water's edge. Seaward the problems become fewer, if not simpler, and at the edge of the continental shelf, problems of conflicting uses are the exception today. But we on the Commission were persuaded that problems of multiple uses of the coastal zone are moving seaward and will continue seaward.

Without going into detail, let me remind you of some of the coastal zone problems:

Pressures on shoreline space have mounted dramatically over the past 20 years. The reasons are clear: the shift of the population from rural areas to the cities (the Nation's seven largest metropolitan areas are on the Great Lakes or the sea coast), the spread of suburban development into coastal areas, and the increased affluence and leisure time of a large part of our population.

The revolution occurring in the shipping industry as we move to jumbo tankers, large bulk carriers and container vessels necessitates major changes in our ports and related transportation facilities.

Electrical power production has doubled every 10 years. We need space for the large nuclear power plants of tomorrow and we must locate them in such a way as to minimize the consequences of the large amount of waste heat generated by these plants. One estimate indicated

that by 1980 the power industry will use the equivalent of one-fifth of the fresh water runoff of the United States for cooling water.

Recreation is one of this country's fastest growing industries and marine recreation is becoming more popular and varied. Scuba diving and surfing have become major sports in the last 20 years. I think California's plan to develop underwater parks is the trend of the future.

I believe we will see small submarines and underwater habitats widely used for recreation in another 20 years.

Rather than talk about all the fishing problems, let me mention something about aquaculture. If we are to consider aquaculture seriously, we must face up to some of its implications as to water and shoreline use. There are those who believe the major problem facing aquaculture is not learning how to grow seafood economically, but overcoming the variety of local, State, and Federal laws and management practices necessary to encourage such programs. For example, developing a raft oyster industry in navigable waters may be a difficult problem in some States.

The growth of the offshore oil and gas industry is well known. There are now some 16,000 offshore wells in the United States alone. Offshore production accounts for some 16 percent of the total production today and is heading toward 33 percent. Industry investment in offshore programs is about a billion dollars a year and still growing.

Last but far from least, the coastal zone is used as a receptacle for pollutants. If there is one common rallying cry around the country today it is that we must do something more to stop pollution. Pollution is more than a coastal zone problem, but I think our proposed coastal zone authorities will aid in this effort.

#### THE MANAGEMENT PROBLEM OF THE COASTAL ZONE

A major conclusion of our Commission was that the primary problem in the coastal zone was a management problem with all the attendant problems that proper management implies. It is true that the Federal, State, and local governments share the responsibility to develop and manage the coastal zone. In reviewing the situation, we concluded that effective management to date has been thwarted by the variety of Government jurisdictions involved at all levels of Government, the low priority afforded to marine matters by State governments, the diffusion of responsibility among State agencies and the failure of State agencies to develop and implement long range plans.

Having said all this about the problems in the States, I would also add that until relatively recently, navigation—over which Federal authority is preeminent—has tended to dominate other uses of the coastal zone, and perhaps for this reason, States have been slow to assume their responsibilities.

The Federal role in the coastal zone has grown haphazardly. Closely related functions are discharged by the Coast Guard, Army Corps of Engineers, Department of Housing and Urban Development, a number of bureaus of the Department of Interior and several other Federal agencies.

The Federal Government has sponsored planning activities in certain coastal areas through river basin commissions and Federal activity is itself coordinated through the Water Resources Council and the



Council on Marine Resources and Engineering Development. However, neither of these groups can be expected to be concerned with the detailed management of particular coastal areas.

If you believe, as did the Commission, that a more effective management system is required, one of the first questions to be settled is the level of Government at which it operates. Our second major conclusion was that the management task was primarily a State responsibility and that the Federal Government should encourage the States to accept this responsibility.

Even the most ardent federalists amongst us despaired of ever doing an effective job at the Federal level. It seems highly unlikely, even if it were considered desirable, to put together in a single agency all of the authority and functions related to the coastal zone that one now finds scattered throughout the Federal establishment.

Probably the most that one could expect would be a somewhat more powerful and effective Marine Council or Water Resources Council.

However, we in the Commission were of the opinion that the proper level of Government was the State level. Most of the management functions we are suggesting are traditionally State functions. The extent to which any State wishes to delegate authority to local or regional groups can, within certain limits, be determined by the State.

#### THE COASTAL ZONE AUTHORITY

Coming to our recommendations, the Commission was of the opinion that the States must be the focus for responsibility and action in the coastal zone. We also concluded that in most cases the States now lack adequate machinery for that task. We believe an agency of the State is needed with sufficient planning and regulatory authority to manage coastal areas effectively and to resolve problems of competing uses.

Such agencies should be strong enough to deal with the host of overlapping and often competing jurisdictions of the various Federal agencies. In addition, a strong State organization is essential to surmount special local interests, to assist local agencies in solving common problems, and to effect strong interstate cooperation.

Specifically we recommended that:

A Coastal Management Act be enacted which will provide policy objectives for the coastal zone and authorize Federal grants-in-aid to facilitate the establishment of State coastal zone authorities empowered to manage the coastal waters and adjacent land.

We recognize that the Federal Government cannot compel a State to develop a special organization to deal with coastal management problems. However, by such an act it can encourage a State to do so.

We also recognize that the great diversity of resources, scope, and activities of coastal State governments will prevent adoption of a uniform administrative approach to State coastal zone authorities. In some States a single authority might appropriately be given jurisdiction over the State's entire coast; in others, several groups might be established under a single authority within a State to deal with separate estuarine areas.

The form of a State authority may vary from a volunteer commission with a small staff to an agency like the New York Port Authority with major development authority buttressed by the power to issue bonds.

In our review, the guiding principles for the authorities should in-

clude the concept of fostering the wildest possible variety of beneficial uses so as to maximize net social return. When necessary, public hearings should be held to allow all interested parties to express views before actions are taken or decisions are made changing or modifying the coastal zone.

All information and actions of such an authority should be made a matter of public record. The authority must represent all legitimate interests in the coastal zone, and not be dominated by any single interest whether it be fishing, recreation, industrial development or conservation.

The Commission believed the following powers should be available to the typical coastal zone authority:

1. Planning—to make comprehensive plans for the coastal waters and adjacent lands and to conduct the necessary studies and investigations.

2. Regulation—to zone; to grant easements, licenses, or permits; and to exercise other necessary controls for insuring that use of waters and adjacent lands is in conformance with the plan for the area.

3. Acquisition and eminent domain—to acquire lands when public ownership is necessary to control their use (condemnation procedures should be used if necessary).

4. Development—to provide, either directly or by arrangement with other government agencies, such public facilities as beaches, marinas, and other waterfront developments and to lease lands in its jurisdiction, including offshore lands.

With respect to the latter point, I should note that the Commission recommended that:

States develop procedures to permit the leasing of offshore areas for new uses consistent with the overall plan of the State coastal zone authorities for the development of these areas.

We referred to these leases as "seasteads" in analogy with the Homestead Act of 1862.

#### QUESTIONS CONCERNING COASTAL ZONE AUTHORITIES

Of the various questions and objections that were raised to the idea of State coastal zone authorities during the formulation of our report, I'd like to mention two. The first is that State boundaries are usually not natural division lines for the coastal zone and, for example, Lake Michigan, Chesapeake Bay, and Delaware Bay are shared by more than one State; thus regional authorities would be preferable.

The objection is certainly a valid one, but I don't believe most States are willing to transfer to regional groups the kinds of power and authority we have suggested for coastal zone authorities. Furthermore, the Commission was persuaded that "in most cases sound planning and management undertaken by one State probably will not differ greatly from that undertaken by an adjacent State. When differences do arise, they may be settled by direct negotiations between the parties concerned or by the establishment of ad hoc interstate committees or an interstate commission or compact. Strong coastal zone authorities representing the variety of State interests will facilitate such agreements."

The second question concerns the Federal role vis-a-vis coastal zone authorities. The Federal Government has strong interests in the ef-



fective management of a State's coastal waters and a number of special interests and responsibilities including navigation and security.

The Commission felt that some kind of Federal review of coastal zone authorities was desirable to insure that national interests are protected. Recognizing that any action of a coastal zone authority must be consistent with such programs as the Department of Interior's continuing recreation, wildlife and mineral development plans and with those of the Army Engineers relating to navigation and flood control, we were of the opinion that there should be a single agency in the Federal Government with primary responsibility for reviewing the program of State coastal zone authorities, for coordinating Federal activities in these areas, and for planning, coordination, and management for that part of the coastal zone within Federal but beyond State jurisdiction.

It was our recommendation that these responsibilities be assigned to the new, independent agency recommended by the Commission, the National Oceanic and Atmospheric Agency.

#### COASTAL ZONE RESEARCH LABORATORIES

Finally, let me say a few words about coastal zone research laboratories. Proper management of the coastal zone requires a continuing program of monitoring and research. It also requires a continuing flow of trained people. As a teacher and a scientist, I can't emphasize these points too much. The problems of the coastal zone cut across many disciplines; most of the natural sciences and fields of engineering, as well as law, economics, community planning and political science.

An important aspect of the coastal zone recommendation of the Commission is that concerning the development of coastal zone laboratories affiliated with academic institutions, the possible interaction of these laboratories with coastal zone authorities, and the suggestion that universities affiliated with these laboratories play a more active role in training personnel in these areas.

We considered these coastal zone laboratories as an integral part of the coastal zone recommendations. Further the Commission recommended that these coastal zone laboratories be developed through the sea-grant program.

Thank you.

#### STATEMENT OF DR. EDWARD WENK, JR., EXECUTIVE SECRETARY, NATIONAL COUNCIL ON MARINE RESOURCES AND ENGINEERING DEVELOPMENT

Dr. WENK. Thank you very much, John. I have been identified on your program as the moderator, and those of you who are acquainted with the physics of nuclear engineering appreciate that in most instances moderators are present to prevent unwarranted heat from arising from nuclear power reactors.

I am going to depart from that role if I may, to join this panel as a third speaker with the encouragement, I might say, of Dr. Clingan and the committee, because the Administration has had the opportunity of examining these recommendations and has made a decision which was announced on Sunday, October 19.

I would like to share that with you because I believe you are interested in the outcome of this novel, and I at least might tell you what the next to last chapter sounds like. The last chapter will be written sometime next spring and probably on this side of Washington.

First of all the Administration is supporting a five-point program in marine sciences, four of the elements of which bear on the issues that were raised here today: On coastal zone management, on the establishment of coastal laboratories, on the restoration of Great Lakes, and a fourth one having to do with the ecology of the Arctic.

The fifth of these concerns support for the International Decade of Ocean Exploration, and considering the scope of this meeting, I will not comment further on the fifth, although it is a very important and very significant element in this program.

Let me say too that this is not simply a proposal from the Council to the President. This is a proposal that has already gone through the process of Presidential review and approval, and therefore what I am going to report to you is now part of the President's program that he will amplify in his submissions to the Congress in January—amplify both in terms of proposed legislation and in terms of requests for additional funds over and above the current phase of activity in these areas.

With regard to coastal management, I think that the problems that have been enunciated by the Commission, and even prior to the formation of the Commission, by those in the Congress and in the executive branch concerned about our coastal affairs and reflected by activities of a large number of different Federal agencies, have been brought to a point of necessary action in order that we better manage these scarce resources.

The legislative proposal that will be submitted to the Congress will be to establish a national policy for the development of coastal areas, to authorize Federal grants with matching State contributions that will encourage and facilitate the establishment of State management authorities.

Such legislation will assist to assure that rapid coastal development does not destroy limited coastal land and water resources and that all interests in the coastal areas would have consideration. Grants are anticipated in two phases, the first for the initial development by States of planning regulatory mechanisms and a second phase subsequently for the operation of those State management systems that are developed.

The latter grants would be made available to a State contingent on a State demonstrating a capability to propose plans that proved, first, for balanced use of the coastal margin both land and water, second, for access to management-oriented research including coastal ecology studies, third, for regulatory authority, fourth, for consideration of interests of adjacent States, fifth, for land acquisition and power of eminent domain necessary for implementation of the plan, and finally, for review of proposed Federal assistance to State and local projects to assure consistency with the plan.

States already have the responsibility for the management of these resources. They have often lacked the regulatory management capabilities needed and they have been faced with a diversity of coastal jurisdictions and the absence of ecological information.



The intent of the program therefore is to strengthen the States' capabilities, lessen the need for Federal intervention, and facilitate integration of planning, conservation, and development programs among diverse public and private interests.

With regard to coastal laboratories, steps will be taken toward establishment of coastal laboratories, supported by the Federal Government, but strengthening and consolidating existing facilities wherever possible, intending to provide information on resources development, water quality, and environmental factors to assist State authorities and others in coastal management. Existing facilities will be strengthened and consolidated as necessary to provide capabilities to—

- Develop a basic understanding and description of the regionally differentiated ecology of our 13,000-mile coastline;

- Anticipate and assess the impact on the ecology of alternative land uses, of pollution, and of alterations to the land-water interfaces;

- Operate coastal monitoring networks; and

- Perform analyses needed for these State-managed coastal authorities.

Establishment of these capabilities will be phased with the development of coastal management plans to foster State access to environmental data and research capabilities.

With regard to the Great Lakes, the step that is being proposed now is to examine the feasibility of restoring the Great Lakes with technological as well as with regulatory mechanisms by a pilot study using a lake of manageable size. Existing environmental technology and techniques will be tested, including pollution measuring devices, methods of artificial destratification by aeration, mixing, and thermal upwelling techniques, thermal pollution control and enrichment, artificial bottom coating, filtering, harvesting of living plants and animals, and restocking of fishery resources.

The program is intended to reinforce current investigations, and bring together additional competence from industry, academic institutions, and Federal laboratories.

The fourth one I realize is of interest to just one State but nevertheless concerned with coastal ecology. It is focused on the arctic environment. Here is a program directed to understanding better the polar icepack, including its impact on transportation and global weather and climate; the polar magnetic field and its effects on communication; geological structures underlying the arctic lands and polar seas both as potential mineral sites and as hazards to construction and resource development; balance of the arctic ecosystem; the presence of permafrost; and slow degradation of liquid and solid wastes under arctic conditions.

Behavior and physiology of man in this environment also will receive increased attention. Initial emphasis will be on strengthening and broadening arctic research capabilities. Consideration will also be directed to formulating an overall policy framework for arctic-related activities.

The administration has further determined that these programs are not just desirable, not just important, but they are urgent. The administration is studying the Commission's proposal to establish a new independent agency, but it was decided not to wait for that resolution

before proceeding with the development of these programs and as a consequence the responsibilities for planning these programs on an interim basis until this issue on NOAA is determined have been assigned within the Government on a lead agency basis, responsibility for drafting legislation for the State authorities with the Department of the Interior; preparation of plans for coastal laboratories with the Department of the Interior; the preparation of plans for the pilot study of lake pollution with the Office of Science and Technology later to be assigned to the operating agencies, and the study of arctic ecology, a matter of interest to a number of Federal agencies, to be coordinated by the National Science Foundation.

I want to say one thing further though, that this is not going to be done just in Washington. The Commission quite adroitly consulted with you and your colleagues as they developed their plans and so have the Federal agencies historically as they have developed plans.

I think you see a growing interest in this matter of partnership intensifying the desire and need for consultation with representatives of the State government. So I am sure that the Department of the Interior for example, will increase within the next 2 months its consultation with you as individual States act collectively through the Council of State Governments and other such councils, even considering local and municipal affairs.

I would like to conclude, and then open this meeting for discussion with just one comment, if I may, to you. Because I think most of you in the audience are officials of State governments, I feel that you have a special responsibility and special opportunity in this matter and I will tell you why.

We have a problem that has developed as a consequence of neglect, of ignorance, and just plain human greed. Someone has to look out for the public interest. I believe the officials of State governments have wanted to do this. We want to make this possible.

I think that you as individuals have a further opportunity now to articulate some of your vision and some of your dreams as to ways and means to see some of these goals in understanding a very complex institutional framework that right within your own State government I imagine involves the same bureaucratic rivalries that exist right here in Washington between our agencies, conflicts between public and private interests, and the need for political courage to make your recommendations stick.

To do this, however, means more than simply desire. It means knowledge. Here, I think you see a pattern reflected in all of these, including the fifth of these proposals by the administration, to pay more attention to the environment and to undertake that research necessary in order that we can assess the impact of man on our ecosystem.

This is not an easy job to do and there are not many equipped yet to do this, and it is going to be necessary during the months and years ahead to understand better the kind of skills and intellects and talents needed for this job and this is where the sea grant program will be so very important.

We are going beyond science. We are using science and this is a message that I, not as an oceanographer, but as a practitioner of this limited art of science policy, am trying to communicate in every way possible, that science is for people, and it is through an example in



marine affairs that I think we can see so very clearly how the talents of the scientific community merge with those in public administration, with those in industry, and with those of us who go down to the Chesapeake Bay to boat and swim and fish.

One of the principles of this meeting has been from the outset to invite questions and comments from the floor and I realize we have run a little bit over half of the time. I don't know how much indulgence the chairman has for the panel to run over, but at this point, I would like to open the meeting for questions.

Ladies and gentlemen, the floor is yours.

Dr. JOHN C. CALHOUN. I am Dr. John C. Calhoun.

VOICE. Who is the individual? Dr. Calhoun?

Dr. CALHOUN. One of the representatives from the State of Texas. I work for Texas A. & M. University. It seems to me a point of clarification is desirable. I have read most of the stuff that the Commission has published on this, but I am interested in the matter of definitions. Do I understand when you say "coastal zone authority" that you are talking about the outer boundary as being the coastal water boundary? That is, you are talking about the waters and lands within the 3-mile limit or its equivalent in those States that might have a greater limit, but you are not talking about Continental Shelf lands or Continental Shelf waters?

Dr. KNAUSS. When we discussed the problems of the coastal zone we talked about the problems irrespective of jurisdiction. When it comes to the recommendations for State managed coastal zone authorities, regardless of what some States might like to do to extend their authority further seaward, the only thing we could possibly recommend was State coastal zone authority over that area of water and land over which the State has jurisdiction which at this time is 3 miles for all States except Texas, and the West coast of Florida which has 9 miles.

Mr. WILLIAM H. STOLL. Bill Stoll, Texas. The Texas Legislature has appropriated some funds for the State to begin a comprehensive coastal planning program. I am very curious when you mention that some funds will be available from the Federal Government in 1970 to begin to establish some type of planning machinery within the coastal and Great Lakes States. My question is, has any thought been given to what type of grants these funds will be used for? Will it be 50 percent, 100 percent funds? What is the thinking on approaching this funding problem?

Dr. KNAUSS. We on the Commission made some recommendations about matching funds. On the other hand, I think that this really is now in the lap of the administration and Congress since they have now made some decisions on this. I think Dr. Wenk should be allowed to answer that question, if he will.

Dr. WENK. Let me repeat again as I did at the outset, that you see a clear and conspicuous similarity between the Administration's proposals and the Commission's recommendations. Nevertheless there are details of this kind that need yet to be worked out. It is my impression that unquestionably this will be a matching fund grant, but it is also my impression that some of the officials in Washington are of the belief that the Federal share may be larger at the beginning and may trend toward a 50-50 grant certainly in phase 2 of the planning.

These details will be worked out during the next 2 months, and although it is presumptuous on my part to forecast when the President will transmit a proposal to the Congress, it is my guess that this will be transmitted in January.

I feel very sure that there will be consultation with representatives of the States prior to that time to determine what makes sense.

Remember, now, we are talking planning grants and these are something perhaps on the order of several hundred thousand dollars to each State. These are not operating land grants. These are not land acquisition grants which obviously are going to be in order later.

Dr. KNAUSS. I think I should also add that there has been legislation on coastal zone authorities, introduced in the Senate by Senator Magnuson and although I don't have a copy of that bill with me and I don't recall details, I do believe it makes specific provisions for planning grants. There is also legislation that may be introduced by Mr. Lennon's committee which has rather specific references to the form of the grant.

Dr. WENK. If there are no other questions, let me say on the part of this panel, the three of us, how much we appreciate your attention and interest. And I know I can speak for my colleagues here in saying that what you heard this morning could not have been done without your help prior to this meeting.

Thank you very much.

Mr. CLINGAN. I would like to call for Panel No. 2, if I may, "The Need and Nature of Land Use Regulation," and introduce to you Dr. David A. Adams, of Wilmington, N.C., formerly of the National Council on Marine Resources and Engineering Development.

## PANEL 2—THE NEED AND NATURE OF LAND USE REGULATION

### MODERATOR

Dr. David A. Adams, National Council on Marine Resources and Engineering Development.

### PANELISTS

John R. Quarles, assistant to Under Secretary for Environmental Planning; Dr. Thomas L. Linton, North Carolina Department of Conservation and Development; and Roy T. Sessums, Freeport Sulphur Co., New Orleans, La.

Mr. ADAMS. The concept of management involves the ability of manipulating the resource concerned, and manipulation involves some means of controlling and regulating the use of that resource.

This panel is going to discuss the nature and need of such regulation over coastal zone resources.

Our first panelist, the Honorable Boyd Gibbons, was unable to be here with us, and is being replaced by John R. Quarles, assistant to the Under Secretary for Environmental Planning of the Department of the Interior.

Mr. Quarles is a resident of Massachusetts, did his bachelor's work at Yale, with a LL.B. in Harvard Law School in 1961, and his present position in the Department of the Interior is that among many of the environmental problems that he is concerned with, he represents



Interior in negotiations with the Corps of Engineers over Corps permits which have met opposition somewhere along the line.

Without further ado, I will turn the session over to Mr. Quarles.

# **STATEMENT OF JOHN R. QUARLES, ASSISTANT TO UNDER SECRETARY FOR ENVIRONMENTAL PLANNING, DEPARTMENT OF THE INTERIOR**

I am speaking as a pinch-hitter for Mr. Gibbons, who was extremely disappointed not to be able to come to this program, which he had looked forward to with a keen anticipation, but he was required to go out of the city on this date.

I am not speaking from any prepared statement and I think probably I should make it clear that my comments will be my own, rather than representing any positions which have been reviewed and adopted by the Department of the Interior as a whole.

I want to get as quickly as I can into the meat and marrow of this problem, and therefore I intend to talk only briefly on the basic questions reviewed this morning, as to the questions of whether there is a need for new approaches of management in the coastal zone, and whether there is a problem.

I would say in response to the question of, is there a problem, the answer certainly is, "Yes."

We all recognize the growth of competing demands for the limited resources in the coastal zone, and we certainly can see at this point in time that the prospect has no direction to head in other than the direction of increased intensity and increased squeeze upon limited areas and limited resources of the coastal zone.

In terms of whether this problem is being adequately met by the existing conditions under which use of different resources is determined, I think we probably would also agree that the present situation is not entirely satisfactory.

At this time the determination of usage is made on the basis of the free marketplace, of individual owners using their land for what they want to use it for, or selling it for what they want to sell it for.

This is in keeping with our American tradition. I don't think it proper to be critical of people for taking this approach, but the results of this approach applied across the board are not very satisfactory in terms of meeting our long-term national needs.

In terms of the system that presently exists, the determinations are made primarily on the basis of short-range considerations, and primarily on the basis of economic determinations.

These are not perfect mechanisms for achieving the long-range, overall public interest.

This brings me to the first point that I would like to place some emphasis on, and that is, assuming that there is a need for better techniques of management, what is the level of government at which this new emphasis of management should be placed?

There appears to be developing something approaching a consensus that responsibility should be vested primarily in the State government and exercised at the State level.

I don't believe anyone who has seriously focused on the problem thinks that the Federal Government can, from Washington and from

the Federal level, devise management plans which properly would anticipate the use that each acre of land should be devoted to over the years ahead, so that the Federal Government needs to be ruled out as being the primary responsible agency in management of coastal areas. We certainly recognize this in the Department of the Interior.

The choice therefore really becomes one of whether you leave responsibility to the States, or to their subdivisions, the towns and cities, which I will refer to as the localities.

The localities, I would suggest, are not suitable for exercising these functions. It has been fairly widely recognized that localities suffer from deficiencies of not having strong staffs, skilled people to deal with some of the complex problems. Also, of course, they are subject to local political and economic pressures, and they are extremely concerned with development of their individual tax bases of assessable property within the town limits.

These considerations, however, I would suggest, overlook the principal difficulty with leaving responsibility at the local level, which is that good planning from this time forth needs to encompass a range of vision beyond town limits.

There is a necessity for looking at a coastline that may be 50 miles in length, or 100 miles in length, or, hopefully, even of a greater length, and picking out areas within the coastline which will be devoted to one use or another.

We recognize that some of the uses for coastal areas are consistent with other uses. Others are not compatible with other uses, and therefore certain ones need to be established which will be devoted to industrial uses or recreational uses, preservation of marine habitats, or what-have-you.

But it will not be satisfactory if we allow development to occur on a patchwork, "crazy quilt" basis in which one parcel of land is used for one use, and the immediately adjoining parcel used for an incompatible use.

Development cannot be done well on a local basis.

In this connection, I would call your attention to a statement on page 65 of the Stratton Commission report, which states that, "\* \* \* the maintenance of a major port in every major coastal city is no longer justified."

This is just one indication of the type of problem we have, but in getting good planning for the overall needs, it is necessary to consider what areas will be devoted primarily to one use or another.

I would next turn to the question of planning for competing uses, and here I simply want to make the point that I believe good planning must face up to the fact that different uses have different priorities, and that we cannot assume that every use should be given equal treatment. The resources available to meet the national needs are not proportional to the needs themselves.

For one example, at least in the Northeast and Mid-Atlantic States, we recognize that there is a developing shortage of suitable sites for electric power generating units. Areas which present good sites for that use may in some instances need to be preserved for that use, even though there are other uses which are present, and certain people are anxious to devote the sites to such other uses.



In this connection we should recognize that some uses can only be satisfied within the coastal zone. An obvious example of this is marine transportation. If we are going to have shipping, that has to be accommodated within the coastal zone. Similarly, the preservation of adequate marine habitat to support the fishing industry, shellfishing and the like.

Another use which can only be satisfied in the coastal zone is certain recreation. Swimming obviously cannot occur elsewhere than on the beaches.

These comments may seem like platitudes, but in application to specific instances they are intended to suggest that careful planning requires us to face up to the fact that some of the alternative uses must be subordinated to give way to the priority of uses that must be satisfied within the coastal zone.

As an example, and really more than an example, I would refer to residential development. On page 52 of the Stratton Commission report, the statement is made as follows, and let me quote:

"Private housing has exercised and will continue to exercise the greatest demand for shore property; for example, the Boca Ciega Bay area of the west coast of Florida has been completely transformed by housing developments in the past 20 years. But there are other needs that must be met \* \* \*

I think that, regarding this problem on a national level, serious consideration must be given to whether we can continue to allow areas which can be seen as needed to meet other needs to be used for residential development.

The Boca Ciega example is a good one. Last summer I flew over that area by helicopter, and flew over most or many other parts of the Florida coast, and it is positively striking to look down and see the way an entire area is transformed.

Our technology of earth moving equipment has developed to the point that it is possible for man to transform whole areas, and the rate at which areas can be consumed for residential housing is tremendous.

Therefore, good planning is going to have to recognize this fact, and perhaps face up to some hard questions as to the extent to which this can be permitted to continue.

Another plea which I would make along the line of competing uses, is that high consideration be given to esthetics. We need to look at this problem not only in terms of critical needs for people, such as housing or food. These things are important, but these things in many cases exist in abundance in the United States, and our concern and our focus must shift also to the quality of life.

A broader concern should extend to such items as recreation, which in today's world Americans want, and in many cases it is fair to say they need.

We are beginning to recognize that a strictly economic and commercial evaluation of life is leaving something out, and one of the things that is left out, particularly in our urban and metropolitan areas, is the matter of esthetics.

Accordingly, good planning should take into account the importance of preserving areas which will be esthetically pleasing, not only for the

recreational use, but also for the contribution that they make to the quality of life for people who may simply be driving by or working in the area, or conducting other human activities in addition to recreation itself.

Perhaps I am running longer than I should, and I will try to draw my comments to a close.

I would like to refer to the tools for implementation. These are primarily going to be acquisition of land, and development, which probably will of necessity have limited use, since the State or the towns cannot go out and buy up all the land along the coast.

Permit authority is another approach, but this also is hard to administer, and it does tend to result in this crazy quilt type of development, because it does not really have a foreseen program of how the areas will be developed.

Accordingly, one is drawn to something that in essence amounts to zoning, as really the only approach which will be effective in producing sound management, sound implementation of planning in the coastal areas.

This is really what we are talking about, and I think that we need to face up to the need for zoning, and then, if my earlier comments are valid, I would also add zoning with a substantial influence from the State level rather than merely from the local level.

Finally, I will just add this thought: That the essence of planning is to alter the natural development according to the immediate monetary concerns and advantages of the owners.

It is not, however, strictly fair to take some areas and say there shall be no development of these areas, and other areas and say there shall be substantial development of these areas, and let the chips just fall where they may in terms of who gets the benefit of the increased land values that result from this type of zoning.

There is a need to develop some sort of tool to balance out the advantages and disadvantages that will necessarily accompany the implementation of good planning. This relates both to individual land owners and also to towns.

If you take a major part of the shoreline of a town and say there will be no development along here, and in the next town you allow the installation of a multimillion dollar electric generating unit, you are obviously giving a tremendous advantage to the second town that you are denying to the first. Some development of means to balance these things out in fairness is required.

I think, in summary, there runs through these points a move from the simple and obvious to the complex and obscure.

I think we would all agree that there is a problem, and a need for action. There is general agreement perhaps that this action should occur at the State level.

Our planning for competing uses raises some difficult problems. In terms of tools of implementation, I think more needs to be done in recognizing how we will work out the development of zoning, and finally, in the area of developing devices to even out the fairness of it all, a great deal of development and experimentation and work must be done.

That will conclude my remarks.



Dr. ADAMS. Thank you very much.

As it was the purpose of this get-together to stimulate thinking, and I think to bring to the surface and define areas of disagreement as well as agreement, I wish to encourage all of you sitting out there to develop your comments and questions as we go along, and hopefully, after we have heard the speakers, we can get an interesting discussion going.

Our next speaker is Dr. Tom Linton, who is currently Commissioner of Commercial and Sports Fisheries for the State of North Carolina.

Tom got his Ph. D. in fisheries from the University of Michigan, and served on the staff of the University of Georgia Marine Institute.

As Commissioner of Commercial and Sports Fisheries, he has been very successful in getting a rather comprehensive coastal zone management program through its State assembly in the 1 year that he has had this job.

Tom.

### **STATEMENT OF DR. THOMAS L. LINTON, NORTH CAROLINA DEPARTMENT OF CONSERVATION AND DEVELOPMENT**

Dr. LINTON. Thank you.

I appreciate the opportunity to come before you today and express the view of the State of North Carolina.

Although I will limit my remarks to activities in the State of North Carolina, I do believe land use regulations initiated and enforced or coordinated by any State government should be given the consideration I want to talk to you about.

These activities were endorsed by the citizens of the State as a whole, and in the Federal level.

The people of North Carolina are very interested in the coastal zone, as is evidenced by legislation passed by our 1969 State legislature, which was supported and endorsed by citizens from the whole State. In addition, at the county and at the Federal level, there is tremendous interest shown by elected officials.

For example, the chairman of this conference, Congressman Lennon, a North Carolinian, has been very active in oceanographic and marine science activities through efforts of this subcommittee.

Congressman Walter Jones of this subcommittee and Congressman Richardson Preyer, both from North Carolina, are sponsors of the proposed legislation which would establish a National Institute of Marine Medicine and Pharmacology. Legislation sponsored by Congressman Lennon would establish a coastal zone authority and national coastal and estuarine areas.

This is a reflection of the interest in marine science of the congressional delegation from North Carolina.

At the State level, I would like to quote to you a portion of Gov. Robert W. Scott's legislative message, and I quote:

One of these great gifts of nature is the majestic and mysterious Atlantic Ocean washing our shores. The Atlantic Ocean and our inland waters are frontiers where lie natural resources as yet untapped. With the new emphasis being placed throughout the world on the scientific study of seas, oceans and water resources. I believe that the State must join in the intensive search for answers to the problems and potentials of the ocean and rivers.

This administration will move to a position of leadership in the field of marine science. We will look for ways to determine how the sea can yield more food; how

our coastline can be protected from winds and tides; what mineral resources can be tapped from these depths and how the beaches and shorelines can be conserved.

This is from the Governor, and honored by the State legislature, and we fared quite well.

Last December, the State Board of Higher Education approved the establishment of a marine sciences curriculum and master's and doctoral degree programs at the University of North Carolina at Chapel Hill and at North Carolina State University in Raleigh.

In July, 1969, the General Assembly added a campus at the University at Wilmington, giving the university for the first time a campus located in a coastal county. Plans are underway to establish marine science studies at the University of North Carolina at Wilmington.

There are several pieces of recent legislation which has placed North Carolina in a very advanced position in establishing order in the coastal zone of the State.

In North Carolina, we are realizing the potential of the coastal zone, and, importantly, doing something about it. Plans for the coastal area gain momentum and profusion almost daily.

Let me briefly go through the various regulations we have initiated to at least slow down and guide certain coastal activities until we have time to complete studies that will determine which areas will be used for what, and how to go about development in an intelligent manner.

These regulations have been instituted over a long period of time by the State as it faced specific problems. Therefore, a comprehensive, overall plan does not exist. In this sense, much of the State's regulating legislation could be classified as stopgap measures. You will see how these regulations readily fit into another category: that of long-range planning.

The first type regulation I would like to mention is a law which makes it necessary, effective January 1, to obtain a permit from our Department of Conservation and Development, through the Division of Commercial and Sports Fisheries, for any dredge-and-fill work in the coastal zone. Any modification within the estuarine area must have this State permit, as well as the Corps of Engineers' permit under the Rivers and Harbors Act. This will, in addition, require the Corps of Engineers' permit.

We have initiated a "capacity water use" system in the coastal zone for industries and municipalities, who use millions of gallons of water each day. A permit is now required if the ground or surface water used daily exceeds a certain amount.

The third category is an estuarine beautification bill, which regulates certain acts that would mar the beauty of navigable waters, such as the erection of signs and the disposal of waste materials, trash, debris, et cetera. We have been using commercial fishing regulations as stopgaps for many years.

As I mentioned before, we can very easily classify our regulatory controls as long-range plans, too. Included in our long-range plans are: a comprehensive estuarine study that will result in a coastal zone use plan, establishment of a State Marine Science Council and a Seashore Commission.

Funds were appropriated by the legislature for the State to buy marshlands, and adding to the attorney general's staff a lawyer, who



is the first in the United States to receive a master of laws' degree specializing in ocean law.

A law was passed that directs the Commissioner of Commercial and Sports Fisheries to conduct a study of the estuaries of North Carolina. A comprehensive coastal zone plan, you might say, is the short title.

The title may be short, but if we take the word "comprehensive" in a literal sense, we have a study of tremendous scope. We have set up meetings with the Boards of County Commissioners in each of the 26 coastal counties of North Carolina.

In addition, we have asked that liaison agents from various State agencies that have activities going on in the coastal zone be named to work with the Department of Conservation and Development in putting together the comprehensive coastal zone use plan.

Twenty agencies were contacted. All of these agencies have designated liaison officers. We have held meetings and explained the purpose of the legislation, and asked for their initial contributions. So far we have received excellent cooperation.

The completion report for this comprehensive plan is due in 1973, and will include recommendations of needed legislation, funds, areas that need to be purchased, and all the items that must go into a sensible and workable plan that will result in maximum benefits from our coastal zone.

A staff of biologists, clerical help, draftsmen, and support personnel were provided by legislation to help with the estuarine study, which will eventually determine the essential areas of State acquisition.

We feel that an estuarine system should be established wherein utilization and development can be accomplished while maintaining the quality of the environment. There was \$500,000 appropriated and earmarked for the acquisition of estuarine lands, as a start in this program.

Another activity which occurred during this past legislative session was to remold the functions of our seashore commission. The seashore commission was originally set up to bring into State ownership the lands that would be eventually transferred to the Department of the Interior to establish a National Seashore. The seashore commission, as originally intended, served its purpose.

It was abolished this year, and then reinstated within the Department of Conservation and Development. Its function now, as spelled out in the legislation, is to guide orderly industrial and recreational development, and other activities that take place in the coastal zone of North Carolina, as well as serve as a liaison agency between the State and Federal Government in coastal matters.

This is a comprehensive and parallel operation to the coastal zone plan that we are compiling. As commissioner of North Carolina marine fisheries, the seashore commission and the estuarine studies and permits section are under my supervision. These two sections will work in very close harmony in planning for the future use of our coastal zone.

We also have the marine science council, established during the past administration, and given statutory authority by the last session of legislature. Congressman Lennon was very interested in this council and worked with State officials.

The council was formed, and as a result of council meetings and discussions, a program for marine science development for the State

of North Carolina has been developed. One of the council's concepts is to encourage the expansion of marine science laboratories in three centers along the coast. State money of \$1.8 million was appropriated for council use by the State legislature to serve as matching funds for any Federal funds available for marine science development.

As I mentioned earlier, an ocean law specialist has joined the staff of our Attorney General's office. He will work with the department of conservation and development and the department of water and air resources.

His major role will be to determine land ownership in the coastal zone, working with and advising State officials in pending lawsuits, including the case that the Federal Government has initiated against 13 Atlantic coastal States. The latter controversy involves ownership of the seabed beyond the 3-mile limit.

He will also be involved in negotiations with South Carolina and Virginia to establish the lateral seaward boundaries of North Carolina in respect to these neighboring States.

There are three essentials in the North Carolina coastal zone program: (1) cooperation, (2) planning, and (3) funds. I feel that no program can operate if these three factors do not exist.

In addition, we must have cooperation within the State from the people at large, from the local units of government, from the State government, and the university community, and we must have close working relationships between State and Federal Government. We feel that we have this cooperation in North Carolina at the present time, and that it will continue.

The second factor in our approach is a plan to direct our conservation and development activities in the coastal zone.

On August 6, 1969, Governor Scott of North Carolina testified before this subcommittee. At that time, he endorsed the coastal zone authority and the idea of coastal zone laboratories.

We are in the process of establishing such laboratories as have been endorsed and recommended by our marine science council.

The Governor stated that a State-Federal partnership is essential in this regard. We feel that not only is a State-Federal partnership essential, but to take one step further, Federal-State-local partnership is essential, because the people who live in and visit the coastal zone are the ones who profit or suffer by any decision relating to their area, such as restrictions.

A State-oriented framework in regards to decisionmaking would be best for North Carolina. I believe the role of the individual States has been underplayed in the Stratton report.

Of the many proposals laid down by the commission, few recommendations distinctly specify the State's role, or distinctly specify the State as a participant or a recipient. The call to arms, in general, seems to be to the university-industry-Federal Government trio.

We are working to establish better cooperation within the State to the best of our ability. Better cooperation is also needed among the many different agencies of the Federal Government which are involved in ocean affairs.

Some 20-odd Federal agencies have an interest in this area, and the Federal-State relationship is thereby confused. Possibly the establishment of a Federal agency of the type envisioned in NOAA would tend



to solve this problem at the Federal level concerning Federal oceanographic matters.

During the creation of our comprehensive coastal zone use plan, to insure that we maintain good communications at all levels within the State, we have asked that not only the county commissioners in the coastal counties meet with us, but that representatives from the Federal agencies also be designated, that are located in North Carolina, for example, the Corps of Engineers, Soil Conservation Service, Bureau of Commercial Fisheries, and Bureau of Sports Fisheries and Wildlife.

As a result of our request, individuals of these Federal agencies have been designated to work with us. In addition, the industries that are located in the coastal zone could either be helped or harmed by any comprehensive plan. If we do not have a consensus of all parties who have a vested interest in the coastal zone, any plan that we put together would be an exercise in futility.

This means we must communicate. We must take into consideration and cooperate with all groups, agencies, and the people in general in the coastal zone who will be influenced by this comprehensive plan. Were this not accomplished, any plan we put together will be, in my opinion, an exercise in futility, and will not stand a chance of being enacted by our State legislature.

The third factor in our program is funding. We have received, relatively speaking, excellent funding at the State level to conduct our coastal zone study planning activities and regulatory activities.

However, the State is limited in the amount it can allocate in this large-scale operation. It is impossible for the State to carry the full financial load alone. We must seek financial aid from the Federal Government.

However, North Carolina has not stood idly by awaiting the arrival of Federal gravy trains and waiting for Federal funds to come to us before we do anything. We have put our money where our mouth is. The States must partially foot the bill. North Carolina has.

The brief outline I have presented is the approach that the State of North Carolina is taking. The need is there, and we realize there is a need.

The regulations that I have mentioned will be influenced by information obtained from local, State, Federal, and industry representatives. Without a plan which will be acceptable to a majority of these interests in our coastal zone, the plan will be an exercise in futility and will be wasted efforts.

However, I think that due to the response that we have received so far, we are going to continue to get the cooperation. I am confident that in 4 years we will have a workable plan. The State of North Carolina will be able to more fully realize the benefits from the tremendous assets they have in 2,500 square miles of salt water bays and sounds, 15,000 square miles of continental shelf offshore, 265 nautical miles of intracoastal waterways, and 220,000 acres of coastal marshlands.

We have a valuable resource here. The people realize this and are interested in doing something about it. We are beginning to make progress in the right direction by planning for the future use and development of these valuable resources.

I believe that the people of North Carolina are intelligent enough to have both conservation and development at the same time in their

coastal zone. The time is right, the statutory authority is there, and part of the financing is there.

In Our Nation and the Sea, it is recommended that university national labs be set up, and that universities control these coastal zone laboratories.

Gentlemen, in any legislation that is put forth concerning the coastal zone area, the State agencies should not be overlooked. We have some very competent people. We are making contributions that are valuable. To use our Governor's words, I believe that we should have a Federal, State, and university partnership in this regard.

The coastal zone authority is a necessity. Coastal zone laboratories are very important. But there are problems that we must answer in our day-to-day activities as State agencies, with statutory authority for regulating coastal zone matters.

There are research areas that are beyond the capability of State agencies. These should be handled by the university research community. There are other problems that the State agencies are best equipped to handle, because they have the capability as well as the statutory authority.

Aside from these, there are other problems which involve State boundaries. For example, in North Carolina, Currituck Sound extends into Virginia, and Albemarle Sound receives drainage from Virginia. This is beyond the area of responsibility of the State. This, in my opinion, is a valid responsibility of the Federal Government.

Therefore, in North Carolina, there are a variety of problems, with some falling under the purview of the university research community. There are some which could best be handled by State agencies, and yet a third group which could best be handled by the Federal agencies. Therefore, we have the ingredients for the university-Federal-State partnership which I referred to at the beginning of this discussion.

The local units of government and others who are interested in the problems have certain responsibilities and capabilities. We must capitalize on our strengths, which are different, and cooperate in devising the wisest use of our coastal zone through research and development, which is what we are attempting to do.

Under broad Federal guidelines, the State should establish the coastal zone regulations, and have the primary responsibility and authority to regulate their coastal zones.

I cannot speak for the other coastal States, but I know that in North Carolina we can do this job.

Thank you.

Dr. ADAMS. Thank you very much, doctor.

Our next speaker is Mr. Roy T. Sessums, vice president of Freeport Sulphur Co., New Orleans, La.

Mr. Sessums is the former director of public works for the State of Louisiana, and former dean of the School of Engineering of Louisiana Polytechnic Institute. He is also a former member of the President's Advisory Board on Water Pollution, and is presently serving as a member of the Mississippi River Commission.

In his capacity as vice president of Freeport Sulphur, he has first-hand experience in multiple use of the coastal zone of Louisiana as it affects the sulfur, oil, and gas, and saline industries.



**STATEMENT OF ROY T. SESSUMS, VICE PRESIDENT, FREEPORT  
SULPHUR CO., NEW ORLEANS, LA.**

Mr. SESSUMS. Dr. Adams, panelists, and ladies and gentlemen, in addressing the subject of this panel, I feel that we seek an answer to the question: "To what degree is a management system required for the coastal zone?"

This question suggests that current management may be less than adequate to cope with the conflicts which have arisen increasingly in recent years between the varying demands made upon the air, earth, and water of the coastal zone.

Certainly there is no lack at this time of government bodies at all levels—local, State, and national—which concern themselves with one or more aspects of the coastal zone.

Insofar as man's adverse influence on the coastal ecosystem is concerned, it is generally of two types: Pollutants and water management projects.

Pollutants come from municipal, industrial, and agricultural wastes, the organic and inorganic contaminants, and the physical and radioactive influences. These, of course, are in addition to nature's own pollutants, such as exposed saline outcrops, natural oil seeps, soil erosion, and decaying vegetable and organic matter.

I respect the seriousness of pollutants, but my concern about their effects has lessened as response from municipalities and industries rise to the fore.

Under the Clean Water Restoration Act of 1966 and other related legislation, pollution from municipal and industrial sources is abating, and will continue to decrease as the Federal Government meets its commitments to provide grants for municipal sewerage treatment works, as the FWPCA continues to fund demonstration projects aimed at finding efficient ways to treat and stabilize waste materials, and as public awareness manifests itself through individual action and willingness to pay a reasonable share of the cost for improved water quality.

I do not mean to suggest that we will eliminate pollution entirely. Problems will continue, but I am confident of man's technology—I feel that at some point "downstream," he will cleanse the water faster than he despoils it.

The other type of influence is generated by water management projects, such as dredging and filling, dams and impoundments, navigational and water diversionary measures, and other such projects.

The Bureau of Reclamation has built over 300 dams. The Corps of Engineers and TVA have built hundreds of others. All of these water management projects have produced incalculable benefits for our increasing population in the heartland as well as in the coastal zone, and have served hundreds of beneficial purposes.

Such projects must continue, unless we are to lower the quality of our life. Yet, the consequences remain. The estuarine areas are losing the enrichment from the rivers they need to sustain their productivity.

These water management projects have produced innumerable benefit to man—water for potable purposes, for irrigation, for power, and for many others. Even so, however, a disagreeable question must now be posed—do we want a particular project that upon completion

will provide great benefit to us, or do we want to forgo or modify a project to protect an estuarine system?

The effects of these water management projects are often irreversible, and when this occurs, it is of even greater concern than the effects of pollution. This is a difficult decision to make.

Although the problems which face us as we look upon the coastal zone scene are complex—and some of these problems are just now beginning to emerge—it does not necessarily follow that our response needs to be equally complex.

Rather, I feel that our response should be a measured one. We should seek to use to the fullest extent those agencies which are already providing able management of the many elements which together comprise the coastal zone. We should help them by providing funds and intelligent counsel. I do feel, however, that their efforts should be better coordinated.

Although our panel's primary purpose is to consider the extent to which a management system is required for the coastal zone, I feel compelled to comment briefly on the nature of the management which is needed.

Having had some personal experience at several levels of government—local, State and Federal—and being employed now by a company which has pioneered the sulfur mining industry in the coastal zone, I feel that I may have some understanding of the advantages and disadvantages, the pros and the cons, the pluses and minuses of having such control placed at each of the several levels of our government, and with varying participation by government and business leaders.

I think that we have all seen the depressing effect of too rigid control by a centralized agency. Such agencies sometimes lose sight of the real needs of the area, and the desires of local interests. Their opinions become law. Their actions become increasingly dictatorial and lacking in reason.

In this area of control of the coastal zone, we must develop the right blend of local, State, regional, and existing Federal authority with the proper ratio of government-business participation to assure that the interests of each are considered in arriving at decisions which protect the interests of all.

I feel that we can best achieve this blend by assuring proper local participation in the administration of regulations developed by State and regional government—business agencies acting on guidelines established by an executive agency at the national level.

The control structure developed should provide only that degree of control which will be necessary to assure that the interests of all parties concerned shall be properly considered.

All matters should be resolved at the lowest echelon possible. Matters which in the normal course of events do not extend their effects beyond the geographic limits of a town or city should remain the concern of that town or city.

Should the foreseeable effect of a planned activity extend beyond the limits of a town or city, it should then become the matter of concern for the next higher echelon of government which has jurisdiction over the total area affected by such activity.

At each level of authority, there should be an advisory panel containing representatives of those businesses and industries most effected



by the authority's actions. The functions of such panels will be advisory only. However, the panel or any of its members should be empowered to refer any matter to the next higher echelon should he or the panel feel that the best interests of the area are not being served by a particular decision or action.

Let me give you one example of how industry and government have worked together during an earlier period of emerging technology relating to use of the coastal zone.

I refer to offshore production of oil, gas, and sulphur in the Gulf Coast area of Louisiana and Texas. Intensive development of these industries was accomplished during the past 20-25 years, without interference with shipping, shrimping, fishing, or other more traditional marine industries.

As a matter of fact, the growth of the sport fishing industry off the coast of Louisiana coincides with and was derived largely from the growth of the offshore mineral industry. A good account of this growth is continued in an article in the *Conservationist*, the official publication of the Louisiana Wildlife and Fisheries Commission, the September-October issue of 1968, which is entitled "Twenty Years of Sport Fishing Along the Gulf Coast," written by Mr. McFadden Duffy.

[From the *Louisiana Conservationist*, Louisiana Wild Life and Fisheries Commission, September-October 1968]

#### TWENTY YEARS OF SPORTFISHING ALONG THE GULF COAST

(By McFadden Duffy)

Twenty years ago, sportfishing along the coast of Louisiana as we know it today simply did not exist. True, there was plenty of fishing and many fishermen; but not anything like it is today.

Gulf fishing was limited to private yachts, fishing boats that could be hired when they were not engaged in shrimping activities, boat and bait livery camps where skiffs could be rented, and private boats that were kept near favorite fishing spots along the coast.

Fishing in the inland coastal bays, lakes, bayous and passes has not changed a great deal during the years; although the overall pattern of fishing along the gulf coast has changed greatly during the past two decades. About a dozen species of fish which were only read about in sporting magazines 20 years ago by Louisiana fishermen are commonplace at the docks and marinas all along our coastline from the Texas state line to the Mississippi state line.

Twenty years ago, no one dreamed that there would be three big game fishing clubs in the state and that anglers would be catching blue marlin, white marlin, sailfish, bull dolphin, hefty tuna and speedy wahoo with more than consistent regularity.

Bay fishing consists mostly of speckled trout, redfish, white trout, croakers, flounders, jackfish, drum, sheepshead and tarpon during certain months of the year.

Offshore anglers take amberjack, barracuda, bonito, cobia, dolphin, jackfish, jewfish, king mackerel, Spanish mackerel, red snapper, sailfish, wahoo, tuna, tripletail, spadefish, speckled trout, sheepshead, blue marlin, white marlin, bull redfish and pompano in season.

It was just about twenty years ago that a major oil company erected a test platform near the present sulphur mine seven miles south of Grand Isle. It was dubbed the "umbrella" because it was a small square platform on a single piling.

Fish began to congregate around the structure, and it soon became a favorite fishing spot with gulf anglers because it was only seven miles from shore and the island was visible.

This marked the start of a twenty-year period of transition that enhanced Louisiana's appeal to fishermen-tourists, and greatly broadened the scope of salt water fishing for Louisianians. One after another oil drilling platforms sprung up. Like an army of towering steel spiders, they spread down the Louisiana coast

and began marching even farther into the gulf, growing bigger and bigger—attracting more fish.

And, with this gulfward march of the petroleum industry's drilling platforms went Louisiana's fishermen.

The only single true charter boat of twenty years ago was soon augmented by the conversion of fishing boats to accommodate the growing number of anglers who wanted to try Louisiana's expanding gulf fishing. Private yachts that formerly had fished only inland coastal bays and lakes soon followed and a new breed of anglers was born—gulf fishermen.

Marinas, coastal launching hoists and boat sheds were built closer and closer to the gulf, and the outlets to the Gulf. Bay fishing and coastal lake fishing still attracted a large percentage of angling activity, but gulf waters became increasingly popular.

It was not an overnight transition, but the trend was set. Throughout the 1940's gulf anglers began to push farther offshore. They were exploring and the hopes and dreams of those early explorers began paying off.

In 1953, a well-known fisherman from Metairie, Louisiana, claimed to have seen what he believed were sailfish off Grand Isle. Folks scoffed at him, but he was convinced that what he had seen on several occasions were sailfish. He boned up on sailfish and how to rig for them. Then he went after them.

People secretly laughed each time he ventured out and came in empty handed. But he was determined. In October, 1953, he scored in waters off Grand Isle. It was a top score because his 96 pound sailfish still remains at the top of the Louisiana Outdoor Writer's Association list of the "Top Ten" in each species.

Since then, hundreds and hundreds of sailfish have been caught in Louisiana waters. Highly respected, they are considered commonplace; and one finds them listed on all of the major fishing rodeo "eligible fish" categories.

Other things were happening in the gulf. Underwater spearfishing, a sport that blossomed after World War II, found the divers bringing in huge jewfish that ranged in the hundreds of pounds. Baracuda, a species that had never before been taken by hook and line began congregating around the mushrooming offshore petroleum drilling platforms. The spearfishermen were the first to catch them. With the jewfish and the barracudas came the groupers.

As the number of offshore platforms increased, another new species began showing up. There is still much to be learned about where the pompano come from and where they go in the spring; but in the fall and winter months, rig fishermen began catching the highly-prized food and game fish. At first, pompano catches at best numbered a dozen fish. The falls and the winters rolled by and catches mounted. The hundred-per-trip-mark was first reached in 1960; and since that time, catches of pompano by numerous fishing parties of six persons, or less, frequently number in the hundreds today.

Pompano, considered a mild water fish in Florida, along the coast and at the mouths of the rivers entering the gulf and the Atlantic, developed a fondness for the offshore platforms. Prior to erection of the offshore platforms, a few were taken along Louisiana's shoreline; but with construction of the rigs, the annual migration began to build up to where today the princely pompano is one of Louisiana's leading "winter" fish in popularity with fishermen.

While moody at times and inclined to move from one rig to another during the fall and winter months, they can be sought out. Once a school is located there is plenty of action.

There are two other changes that have occurred during the past decade for the average gulf fisherman. One is blue fish. While always present in considerable numbers; as the years rolled by, they increased in size. Instead of two-pounders or three-pounders; blue fish ranging five pounds and upwards began showing up. They have increased steadily in size and the present state record is a 10-pound, 6-ounce fish caught in July of 1968. Six and seven-pounders are pretty common.

Possibly due to the more than two thousand rigs and platforms a new species of "white trout" also began showing up in gulf waters. Some fishermen call them silver trout; but they are a member of the weakfish family, and far greater in size than the common "white trout" found in the inland coastal lakes, bays, bayous and brackish canals.

And at the same time that massive pompano schools began to arrive in season, it was noted that Spanish Mackerel began to become more numerous and much larger in size. These changes which greatly enhanced gulf fishing to charter boat parties marked only the start of the big changes in sportfishing in the gulf that were to follow.



In 1950, the U.S. Fish and Wildlife Service began operating an exploratory research vessel, the Oregon, in the gulf. Berthed at Pascagoula, Mississippi, most of the four years it operated in the Gulf of Mexico were spent in shrimp investigations, but attempts were made to catch the tuna that were occasionally sighted. Blackfin tuna were seen in 1950. In 1951 large yellowfin tuna, the species commonly canned, were sighted. Efforts were made to take them in purse seines, but they failed.

The following years, efforts were made to take by traditional West Coast methods. That called for chumming with live bait and "slaughter" poles. In 180 days at sea, only one yellowfin tuna was taken.

In June of 1954, the Oregon employed the Japanese long line method and reported taking large yellowfin tuna, swordfish, marlin and sailfish. The Japanese long line is actually a long trot line. The main line was fished at a depth of 120 feet and was about eight miles long. From it were drop lines about 25 feet long and connected to two-foot-long cables, to which baited hooks are fastened. In short, the Japanese long-line resembles a trot line eight miles long and strong enough to hold tons of fish if they take the bait.

One particular "set" was made by the Oregon about 40 miles from the mouth of South Pass. When the mechanical puller had been stopped and the end of that set made there were 15 yellowfin tuna, two blue marlin, one white marlin, three Mako sharks, eight silk sharks and three white-tipped sharks. The fish were weighed and measured—all but the blue marlin. It was more than 12 feet long and too heavy to weigh.

The second set on that particular trip was made closer to South Pass, about 30 miles south and east. Only 300 hooks were put out on the long line. That set brought in 15 yellowfin tuna, seven white marlin, one sailfish and a yellowfish tuna.

This triggered the imagination of a number of Louisiana fishermen. There were big game fish here and in 1956, three relatively small sportfishing boats ventured out of South Pass seeking big game fish. They stayed fairly close together because sport fishermen had never gone that far offshore. It was pay dirt. The first two white marlin, and one yellowfin tuna, were taken.

Word of big game fishing so close to South Pass spread like wildfire throughout Louisiana. Other anglers made trips and additional big game fish were hooked and lost. Some were taken; but none added up in size to the catches made by the Oregon. The fish were there and could be taken by rod and reel, yet there was much to be learned.

In 1958, Louisiana's angling fraternity was startled when a Shreveport angler brought in a 463½ pound blue marlin, taken on rod and reel. This was the start of intensified big game fishing that led to formation in 1961 of the first big game fishing club in the state. Today there are three such clubs.

Louisiana's big game fishing did not stop at South Pass. It spread westward virtually to Texas. Finding new haunts of big game fish wasn't easy. There were countless thousands of man hours spent in the fighting chairs; and boats ventured farther out into deeper water. They found what they sought—the big ones.

But this is not the full story of two decades of gulf fishing. During the twenty years that have passed, addition of barracuda, pompano, huge blue fish, big "winter" white trout, larger Spanish mackerel, jewfish and larger schools of red snappers; mark only progressive steps in more fishing opportunity in gulf waters for sport fishermen.

There was another development that greatly enhanced the coastal lake, bay and bayou fishing in the southeastern half of Louisiana. We're referring to the Mississippi River-Gulf Outlet, a 70-odd mile long ship channel that was dredged by the U.S. Corps of Engineers as a straight, shorter outlet to the Gulf of Mexico from the Port of New Orleans, linked to the port by the Intracoastal Canal.

From the outset, it was also dubbed the "tide-water channel". That means that it was an infusion cut that remained at gulf level and introduced gulf water and more salt water fish into the lakes, bays, bayous and canals of south-east Louisiana. This greatly improved fishing by increasing water salinities and bringing salt water fish close to the "average fisherman's" reach.

How much has this twenty year change in the pattern of gulf fishing meant to the people of Louisiana in the form of outdoor recreation? That would be difficult to answer, but there are signs everywhere that serve as symbols of what all of this has meant. About twenty years ago, there was only one full time fishing boat available for charter. Today, from Cameron to Mississippi, it

is estimated that there are at least 75 charter boats at principal marinas or fishing ports, along the coast.

Perhaps another symbol of what two decades of gulf fishing has meant to Louisiana fishermen is the trailer hitch. Twenty years ago, the sight of a trailer hitch on an automobile was a rarity. Today, it is commonplace. Boat sales have increased at a staggering rate during the past twenty years and sales have not ceased to climb. The same is true of larger and more powerful outboard motors.

About the only thing that has not changed as far as the gulf sport-fishing picture is concerned is the deep-rooted interest in fishing. The days of the sputtering motor and skiff and the slaughter pole are gone—just as the horse and buggy days are gone. The rods and reels of twenty years ago appear like broom sticks with winchlike reels compared to today's fast-tapered rods and silk-smooth reels. Fast fishing cruisers, with outriggers have replaced the hired luggers and modern standards of living have placed a boat within the reach of middle-class families.

There have been many changes in gulf sport-fishing but the best is yet to come.

Going back to the production of oil and gas off the shore of Texas and Louisiana, out of this situation of the production of oil and gas industries in the coast emerged a panel of advisers to the Commandant of the Coast Guard on offshore operations.

This panel has representation from the offshore industries of oil, gas, sulphur, construction, and crew boat operators. The panel members meet and work together with the Coast Guard to advise on the offshore industry in the area of the Coast Guard jurisdiction.

The result has been that problems are handled more equitably and more expeditiously, each party recognizing and respecting the rights and responsibilities of the other. This is a most constructive manner of attacking and resolving unforeseen problems in an emerging situation.

It could serve as a prime example of the manner in which we can best cope with the multitude of problems facing us as we attempt to manage the coastal zone, with its Pandora's box of complex and interlocking troubles.

In summary, I feel that:

1. We are making progress in reducing pollution.
2. Our main problem of management concerns the irreversible effects of certain essential water management projects.
3. There is no need for additional agencies or for a superagency.
4. There are agencies at all echelons which are now ably providing varying degrees of management.
5. These agencies may need to coordinate among themselves a bit more effectively to capitalize on new data and understanding about the nature of coastal zone problems.
6. Management of the coastal zone should be based on providing control at the lowest echelon practicable and should include adequate industry participation.

In conclusion, I feel that we should commend the various elements of the Department of the Interior, the Coast Guard, the Corps of Engineers, the Coast and Geodetic Survey, and others for the effective work they are doing to enhance and improve our environment. They have been in the vanguard.

Their tasks have been formidable, and the challenges great. They have met these challenges. The success of their efforts can be seen on every hand. I believe our lives are richer because they have and are performing their jobs so well.



Thank you.

Dr. ADAMS. Thank you, Mr. Sessums.

The three presentations that you have heard, although somewhat parallel in approach, contain enough divergence I think to stimulate some comments and questions from the group.

Do you have some questions?

Dr. HERBERT FROLANDER. Dr. Herbert Frolander from Oregon State.

I would like to refer to the comments made by the first speaker relative to recreational uses.

There are many taxes attached to use of these recreational places, thus I might add a plea for the 99.99 percent of the population of the United States. The plea would be that not only there be recreational areas provided with all the things that they entail, but that these recreational areas be financially accessible to the vast public.

There is quite a difference between being accessible and being financially accessible for the families who wish to visit and utilize these areas.

Dr. ADAMS. Could you amplify a little bit more on what you mean by "accessible" and "financially accessible," how you would go about making these financially accessible?

Dr. FROLANDER. There are some areas that are set aside, and are not financially accessible to the vast majority. I am talking about the vast number of families who are going to the coast and would like to visit and picnic and enjoy the seashore recreation and cannot stand the tariff developed in many areas.

I shudder to think today of the effort that would be involved in, for example, trying to set aside a National Yellowstone Park.

Dr. ADAMS. Thank you.

Do you wish to comment on that?

Mr. QUARLES. I will not comment at any great length, other than to state my agreement with the point made.

I think I might refer to the action taken by Secretary Hickel in striving to prepare plans for the Gateway National Recreation Area in New York City, which would, if successful, put large recreational areas within a subway ride of people who are among those most lacking in recreational opportunities.

This need is very great. It is very staggering to consider how difficult it would be to create a Yellowstone today. The only follow-up to that proposition is how difficult it will be to do it tomorrow.

We cannot set aside huge tracts like that today, but we can set aside some. I truly feel that we must do so.

Dr. ADAMS. Are there any other questions?

Dr. LYLE ST. AMANT. My name is St. Amant. I am the assistant director of the Louisiana Wildlife and Fisheries Commission.

I don't really have a question. I would like to make a comment.

I would like to both agree and disagree with my colleague, Dr. Sessums of Louisiana.

Louisiana finds itself in a peculiar position, in that it probably has the greatest amount of industrial and multiple use of its coast of any State in the Union.

There was a figure given here earlier about the number of oil wells on the coast. I don't know whether it was accurate or not. My recent figures indicate that Louisiana has about 13,000 active wells off the

coast in Federal waters. There are another 24,000 active wells in Louisiana waters, from the 3-mile line to the intercoastal system, which essentially includes the march boundary of the States. Associated with these industrial activities are possibly some 50 or 100,000 miles of pipeline.

I say this to indicate that there are going to be few States that have this amount of industry in the near future.

Associated with this industry has been a multitudinous amount of engineering activity for navigation and just to get the plants and drilling operations going.

Our waters are shallow. You cannot move in a drilling operation without dredging. Practically every drilling operation within the coastal area requires that they be dredged, or at least swept.

In addition to this, every foot of pipeline, every tank battery, every collecting line, including gas lines, requires considerable dredging. The 36-inch line requires a 4-foot channel to an 18-foot depth to move the equipment through, and the accompanying dredging tools that go with it.

If you fly over the coast of Louisiana in a plane, it certainly does not look like it did 20 or 30 years ago. It looks like a network of canals, systems that are all man-made.

I say this, and yet I am going to tell you in the next moment that as a conservationist, and as a fisheries expert (question mark), I must point out that our production of fisheries over the last 20 years has not been measurably reduced insofar as we can determine.

Our production of shrimp in Louisiana has averaged about 60 million pounds a year. At times we go up beyond that. Our production has been second or third or fourth in the United States throughout this period.

Now, we have had a tremendous amount of problems in trying to accomplish this. I think that you can learn from our situation, because most of our regulations have been hindsight. We have developed them after the fact.

For example, all of the pipelines in Louisiana are so scattered and mixed up that I don't think anybody can locate them. Some of the old ones have been abandoned. It is true that you can hardly run a transit through some of the areas because there is so much metal. You cannot depend on where your compass is pointing. I think the engineers will agree on this.

These pipelines could have been put in patterns. It would have cost the industry more, but they could have been laid out in patterns where we would have had less trouble.

We find now that we have quite a big shellfishing industry in Louisiana, and as a matter of fact, it is the industry that actually supports the marine program, because all the funds are dedicated to marine research and development, and it amounts to more than \$1.2 million a year in resources dedicated back to the State for this work.

And there is conflict between the industries. Yet we find that the pipelines are getting to be involved with these Shell leases, because when you dig up a pipeline, you have trouble.

This could have been prevented somewhere along the line.

There was a point made earlier that the States had no jurisdiction beyond 3 miles, but we find ourselves faced with the Federal Govern-



ment liking its money as much as the State does, so that we have 14,000 wells offshore coming in at the rate of 500 a year, if you take the average, but can the State afford to lose its fisheries because of Federal interest in royalties from offshore mineral development?

This is the kind of thing that we are faced with. We are operating outside the 3-mile limit. Through agreement with the Department of the Interior and Geological Survey and other Federal agencies, we find that the State is doing all of the seismic regulation. We make the regulations, and then turn around and attempt to enforce them.

We also try to do something about pollution. It is not easy.

The thing that you have to look at when you get involved in multiple uses is to beware of the spectacular. These oil wells blow out, and the spills and accidents that occur are inherent in industry.

When you industrialize, you are going to have accidents, but no industrial accident, or for that matter no national catastrophe of short duration has ever really destroyed a biological population. There is an inherent insurance in biological populations where they rebuild themselves.

The problem is when you permanently destroy the environment, and here is actually a competition for space. You put so much industry in one place, and you cannot have something else.

We are reaching this point in Louisiana. We are reaching it offshore. We have problems between navigation and the oil industry. We have problems with navigation and rules of the road between the seismic companies and the fishing industry.

This happens to be international. Rules of the road and lighting is a Geneva Convention thing, not done at the Federal level or the State level.

One of our real problems today has to do with who is going to regulate the dumping, and permission of dumping solid waste materials offshore. Dumping of this material will be theoretically in the ocean. Theoretically, we have enough water to disperse it, but economically, we cannot do it that way.

All we have is compromise. We get in and debate and argue and talk about it, and say this will not hurt this small area, but a lot of small areas will eventually ruin the entire system and I think at least in Louisiana we are getting pretty close to it.

I hate to disagree with my colleague, but I do think that this is a situation that exists today, and it can exist in the United States within the next 25 or 30 years.

Thank you.

Dr. ADAMS. Thank you, very much.

Lyle St. Amant has had some very close relationship with these problems in Louisiana.

His comment was directed to Mr. Sessums.

Do you have any reply?

Mr. SESSUMS. Actually, I don't think Lyle was directing that to me. We have worked on these problems for many years, and still work together on these problems.

I would like to commend him for his statement. There is no difference in opinion, really. As I mentioned, these problems have to be resolved. You come to the situation where you either do this or that.

However, I do believe that we will continue to compromise. This is the way of life. You compromise each morning when you decide whether to get out of bed or not. Sometimes you would rather stay there, but you get up, of necessity, maybe. This is a compromise. What you will eat today, if there is more than one choice, will likewise be a compromise.

As Dr. St. Amant stated, the best result we can get (and we get this result from his own agency that so ably assists in directing, and has for a number of years) is that our marine population, fishing and such as that, is reasonably stabilized.

I would say this is an example of very good, very able management and direction by the agencies in the State of Louisiana in controlling, shall we say, or guiding the industrial development in these marshes where some 20-odd thousand productive oil wells are now located, plus those beyond the 3-mile limit. Some 14,000, I believe you said, Lyle.

You know, if I may comment further, and I am not connected with the State in any way at the present time—but have been in the past—other than as a citizen, the State of Louisiana derives approximately 50 percent of its revenues from the mineral resources that are developed in the State.

Now, this in itself will pose a problem if you over-regulate.

I would say in all sincerity regarding the State of Louisiana, and I believe Dr. St. Amant will probably agree with me, nearly if not totally, that we do have at the present time a fairly high degree of real rapport in the management of our States resources.

This includes natural resources as well as the mineral resources and other developments. And his director is the chairman of the Stream Control Commission, which controls the pollution, the effluent, et cetera, and the permits as to whether you can or cannot do something.

The reason it is being put in the ocean is because it is being barged down the river as the cheapest way. We find that the companies don't want to move it to the depths.

If we allow dumping of waste materials, impurities to go into this system, we are going to find that the mid-continent of the United States dumps all its waste off the Mississippi Delta, because it is the cheapest way to get it somewhere. It will be dumped within 100 miles of Southwest Pass, and no company is going to be able to afford to move it there.

We have had a request to dump such materials as caustic peroxide in quantities of one and a half million pounds within 20 miles of the mouth of the Mississippi River.

I don't believe there is a scientist here that can tell me what would happen if somebody dumped a million and a half pounds of such a toxic in the Gulf waters near shore.

They want a continuous permit to dump.

These are things that need handling. It is true that you have agencies that are set up to do it. I must agree that perhaps we have too many agencies, and maybe we are too strict, but what we find is that we constantly, in this great democratic society, compromise ourselves to death.

I make decisions, but I cannot be arbitrary. I have to do what is best for the State, at least at the moment, and I compromise with this and that and the other thing, but compromise to the degradation of



the environment, and I think there is going to come a time when we go beyond the point of equilibrium, when we slip over and lose environment in total. To go back to the original statement which kind of set me off, if you will excuse me, the fact that we do have good fishing off Louisiana around the oil wells is because they act like large collecting devices of the undersea systems, but this does not indicate that we have a greater population of fish.

The second thing is most of the fish on the Continental Shelf are dependent upon the nursery areas in at least some part of their life cycles. If the Louisiana nursery area, its coastal 5 million acres of marsh, is destroyed, then there will be no fish around these oil wells.

That is a point that a lot of us lose sight of, and I think it is time that we do set up a system.

It is not going to be easy for those of us regulating to handle this. What we need is someone to stand up with enough courage to say that this type of thing shall not happen, or this has priority, or that has priority. We don't have that now.

I commend not only the Department of Wildlife and Fisheries in the State of Louisiana, but the other State agencies. There are another dozen that have some degree of control over these developments. I think it is a well balanced control.

Certainly anything could be improved upon. I would like to expand this.

Texas will have certain oil operations, and are faced with essentially the same problem. Problems will be generated in this particular type of industry, I am sure, in Alaska.

I have been fortunate to visit up there a couple of times in the last 4 or 5 months, not on oil business at all, but one purely a pleasure trip—hunting; another a business trip with some vacation delay en route. But wherever you have these things, as we pointed out, and will be again pointed out, I am sure, time and time again in the next day and a half, it is just a process, I believe—and I hate to use the word again—of compromise.

This is the way we make progress, in compromising.

Dr. ADAMS. Thank you.

It is good to see that the level of interest is reflected on the number of hands coming up, increasing as we go along, but the clock runneth, and we have time for one more question from him who gets to the mike first.

Mr. James M. TOBIAS. I really would like to make a long statement.

Dr. ADAMS. Would you identify yourself?

Mr. TOBIAS. Jim Tobias, from the South Carolina Port Authority.

There is an old saying that if you say something often enough, people will believe it is true, and I have to take exception to one thing that Mr. Quarles said, which is in the Stratton Report on page 65.

That statement is that there is no longer justification for maintaining a major port in every major coastal city.

I am sure that Chairman Garmatz would quarrel with that in the case of Baltimore, and Congressman Lennon would quarrel with that in the case of Wilmington and Morehead City.

I think there is not sufficient time to debunk that whole argument at this very moment, but it is sort of a shortsighted type of thing that seems to be prevailing where the Corps of Engineers is addressing itself to the problem of dredging in the harbors of the United States.

The shortsightedness comes from the old case of penny wise, pound foolish. On the one hand the United States goes devoting much attention to the development of the 50 States, and on the other hand we are trying to cut short development by decreasing the maintenance of harbors.

That same paragraph notes that many of our major cities are coastal cities, and it is no accident of history that many of our major cities are coastal cities. Water has something to do with it.

If we cease to maintain and to dredge the major ports of this country, we will tend to worsen all the problems that this country now has. We address ourselves more to the problems of the cities, the urban problems.

Let us take, for example, the case of New York. Say that we only maintained New York and one other port on the Atlantic coast. What a tremendous influx of population and industry would again center in the Northeast.

I think that this statement needs a continual debunking, that it needs a lot more study.

In that same paragraph it mentions the fact that in the future packaged cargoes, oil cargoes and container cargoes will all find their separate ways to the world.

This is quite erroneous. It is not true.

Speaking from the standpoint of a port authority, we can see in the future perhaps a great number of ports developing as container ports. We do not believe, for example, that you can designate a port like Baltimore as a container port, and expect all the cargo from the Southeast to move through that port.

This kind of folly can really tend to not cure the economic ills of this country, but to foster them.

I would like on this occasion, and any other occasion, to debunk this statement, and will be glad to do it in more detail.

Dr. ADAMS. Thank you very much, Mr. Tobias.

Mr. Quarles.

Mr. QUARLES. I will try to respond briefly, because my reference to this example was meant primarily to be illustrative rather than to focus on this particular case.

But what I would strongly urge is the overall importance of planning to meet large community needs, not necessarily the needs of an individual town or an individual city.

Your reference to Baltimore, for example, New York, and so forth, does refer to major cities. How far it would make sense to go in terms of trying to develop large-scale port facilities in cities of that size, or slightly smaller cities is certainly not a question that I am prepared to comment upon.

This perhaps illustrates the desirability of leaving the final decisions as to particular uses to the States, rather than trying to hit them from the Federal level. But there is a need to do this from an overall point of view.

Now, I think closely related to this is the need for dialog between Dr. Sessums' assessment and their reference to preservation or not of marine habitat.

In view of the dredging and fill permit orders of the Corps of Engineers, the Department of the Interior is required under the Fish



and Wildlife Coordination Act to consider the adverse impact of any proposed projects upon marine habitat.

In many cases we can see that a particular project would in fact reduce the existing marine habitat, and therefore it is impractical, and from that viewpoint alone is negative.

On the other hand, a project may have important values from other social needs.

The question therefore is presented as to whether this use should be permitted in the proposed location. We really are helpless to review these in a meaningful way without having some overall plan as to what marine habitat is going to be preserved, and what is not going to be preserved.

It really is essential that there be agencies evaluating what is required to meet the total national needs 30 or 50 years in advance.

Whether that calls for major port facilities in your city, I will not try to comment, but I think that the basic approach is entirely valid.

Dr. ADAMS. Thank you.

I am afraid a very short one, sir, and then we are going to have to go.

Mr. TOBIAS. It is not a question of port facilities in South Carolina, but in every State in the country.

On the concept of coordination, we get along quite well. In fact, South Carolina has a legislative proposal next year for an agency which will coordinate multiple use, so that we have no quarrel there.

My quarrel is with the concept of limiting the dredging to particular cities on a national level.

Mr. QUARLES. I would agree with that point.

Dr. ADAMS. Thank you.

I commend all of you for the eagerness with which you jumped in today to the discussion here, and the contributions that you have made by doing so, and request that you continue to be thinking over lunch.

Now I will turn the meeting back over to Tom.

Mr. CLINGAN. Thank you, Dr. Adams.

We appreciate the efforts of you and your panel, and the panel that went before.

We will adjourn to meet here at 2 o'clock.

Thank you very much, gentlemen.

(Whereupon, at 12:25 p.m., the conferences adjourned, to reconvene at 2 p.m., the same day.)

#### AFTERNOON SESSION

Mr. CLINGAN. We will start the afternoon panel. It gives me a great deal of pleasure to open our afternoon session by introducing to you Mr. George Sprague, Department of Natural Resources of Boston, Mass., heading the panel dealing with interstate and intrastate problems.

#### PANEL 3—INTERSTATE AND INTRASTATE PROBLEMS IN COASTAL ZONE MANAGEMENT

##### MODERATOR

Mr. George R. Sprague, director, Division of Conservation, Department of Natural Resources, Boston, Mass.

## PANELISTS

John H. Dolan, executive director, California Advisory Commission on Marine and Coastal Resources; R. Frank Gregg, New England River Basin Commission, Boston, Mass.; David Wallace, director, Marine and Coastal Resources, State of New York.

Mr. SPRAGUE. I know each of you looked on the program and have seen Robert L. Yasi. Don't be confused because he is in Boston. Mr. Yasi was formerly with the Department of Natural Resources in Massachusetts and is now executive secretary to the Governor of Massachusetts. He is in traction with a bad back. I don't know whether that is an occupational hazard from being on the Governor's staff in Massachusetts or not, but he couldn't be here today and sent his regrets.

This is the panel on interstate and intrastate problems in coastal zone management. I think it is appropriate that two of the three members of the panel come from the Northeast where the areas of the States are so small that almost any problem that we face becomes intrastate.

The first speaker to my left is Mr. John H. Dolan, who is presently executive director of the California Advisory Commission on Marine and Coastal Resources. Mr. Dolan received a bachelor of arts degree from Holy Cross College in Worcester, Mass., subsequent to receiving an engineering degree from the Navy. He was the first program manager for the Navy's deep submerged systems project and is now involved with all of the problems which California is faced with, particularly it comes to my mind around Santa Barbara.

I now give you Mr. Dolan.

#### STATEMENT OF JOHN H. DOLAN, EXECUTIVE DIRECTOR, CALIFORNIA ADVISORY COMMISSION ON MARINE AND COASTAL RESOURCES

Mr. DOLAN. Thank you, sir. It is indeed a privilege to have been designated by Governor Reagan as one of his two representatives to participate in what we consider this most important conference. The issues involved in coastal zone management are of urgent concern to both the legislative and executive branches of California State government and are actively being examined with high priority.

The conservation and development of the coastal zone involves the interests of numerous State departments and agencies and the situation resembles in many respects, the fragmentation of effort existing in the Federal structure.

As you in this group are well aware, the widely separated management responsibilities for marine oriented activities at the national level promoted the Commission on Marine Science, Engineering and Resources to recommend establishment of a National Oceanic and Atmospheric Agency (NOAA), and has led to such legislation as H.R. 13247, and the proposed drafts of September 16, 1969 on coastal zone authorities. Of course, Mr. Lennon's bill is parallel to Mr. Magnuson's bill in the Senate and there are others.

California, I think, has been aware of and investigating solutions to these problems within the State for several years. Within the past



18 months, and particularly the past year, I feel we have made excellent progress in resolving some of our intrastate problems and it is to these activities that I will address my remarks today; leaving interstate considerations to the other members of this panel and to the general discussion sessions which will follow.

This approach is due in part to the time limitations and the fact that I am also submitting a statement for the San Francisco Bay Conservation and Development Commission (BCDC). It is also influenced by the prevailing view of our Commission that we should concentrate initially on getting our own house in order prior to any deep involvement in interstate considerations.

This is not to say that we are not interested, but we have been initially proceeding on the premise that we should first get our own house in order.

I should point out that Mr. Harold D. Bissell, executive secretary of the Interagency Council for Ocean Resources (ICOR) is Governor Reagan's other designated representative and will be participating in the discussions during these 2 days. He is present here today.

In addition there are four CMC Commissioners present: Dr. Russell Keim, Dr. F. Gilman Blake, Mr. Robert Krueger, and Col. T. R. Gillerwaters. CMC Chairman, Dr. W. M. Chapman will also be present tomorrow.

These gentlemen that I have mentioned, have been working on problems such as we are discussing today for many years at the local, State, national and international levels of Government and I am certain that they can and will make valuable contributions to the discussion periods.

Background. In assessing how California is proceeding with respect to coastal zone planning, I believe a very short historical review will be useful.

In late 1964 Governor Brown appointed a group known as the Governor's Advisory Commission on Ocean Resources (GACOR). This 18-member commission met for the first time in January 1965. With the change in administration GACOR resigned and after a brief lapse was reappointed by Governor Reagan. By 1967 the importance of marine and coastal resources had received increased recognition and the GACOR was replaced with the statutorily established California Advisory Commission on Marine and Coastal Resources, the CMC. The membership was increased to 36, including six legislators, three State assemblymen and three State senators.

The other 30 were appointed by the Governor and embodied an expertise drawn from executives and top management in industry, the scientific, academic and legal communities.

With the establishment of this Commission as a legal entity in November of 1967, its modus operandi assumed a more formal and legally responsive approach. Most of the old GACOR members were included on the new CMC. But now, rather than a group appointed as advisers to the Governor, they were a legally established body acting under a mandate of the legislature. In much the same manner as the Commission on Marine Sciences, Engineering, and Resources reporting to both the President and the Congress, the CMC reports to both the Governor and the legislature. We now submit annual reports to both these branches of State government with letter reports on a more frequent basis on specific priority issues.

*CMC Responsibilities.* With respect to CMC responsibilities, in its advisory capacity CMC is required on a broad basis to review known and estimated future needs for natural resources from the marine and coastal environment necessary to maintain an expanding State economy. With special reference to the coastline, the CMC reports to the Governor and the legislature in terms which define the total public interest in this valuable asset.

Bear in mind that the enabling legislation which established CMC is entitled the Marine Resources Conservation and Development Act of 1967 and our interests very definitely include both elements; that is, conservation and development.

In addition to the broad responsibilities referred to previously, there are a number of specific points outlined in the legislation with respect to the CMC's responsibilities. Alphabetically they are spelled out (a) through (1) and include such subjects as land use in the coastal zone, conservation and utilization of the mineral and living resources of the marine environment, recreation, wastes management, et cetera.

One of the broader responsibilities assigned to the Commission, however, is that of reporting again to the Governor and the legislature each year on the activities and accomplishments of the various State agencies and departments involved in marine oriented activities.

This had led to a committee structure within the commission which generally focuses monitoring responsibilities on one or more CMC committees with respect to one or more State departments. For example, our Living Resources Committee is primarily involved with following the activities of the State Department of Fish and Game. We have nine such committees plus a steering committee, or a policy committee group.

Progress in the executive branch of California government. As far as progress, I will now allude more to the executive branch of California government, the old GACOR recommended, and the new CMC reaffirmed, that if the vital importance of marine and coastal resources was to be placed in proper perspective, it would take recognition at the cabinet level.

This was done in late 1967. By executive order the Governor established the Interagency Council for Ocean Resources (ICOR). ICOR is chaired by Lieutenant Governor Reinecke now, and Lieutenant Governor Finch originally and its composition includes the Secretaries for Resources, Business, and Transportation, Human Relations, Agriculture and Services and the chairman of the State Lands Commission.

The primary and vital responsibility of ICOR was to develop the California Comprehensive Ocean Area Plan (COAP). The legislation establishing CMC levied this requirement upon the Governor. He established ICOR and during the past year, I think ICOR has become a viable entity.

The initial difficulties can be briefly summed up. ICOR was established but with no budget and no staff. As an individual I was hired by CMC and, on a double-hatting basis, loaned to ICOR as their executive director for nearly 1 year. It did not work. One man could not do both jobs; the budget was too thin to split; and the tasks of the two shifts were not always congruent. It is a rather difficult task for one individual to participate in the development of a plan by ICOR and then turn around and convince the reviewing authority, CMC, that it is a great plan.



CMC therefore recommended that ICOR have its own budget and an independent staff. Last year I had the dubious pleasure of preparing both CMC's budget request for another year, plus ICOR's initial budget request. Both went through and ICOR now is budgeted in terms of money from the general fund; services from marine oriented departments; and a 701 Federal grant for the development of the COAP. ICOR is proceeding with the plan and the CMC monitors its development on a step-by-step basis.

*The New Department of Navigation and Ocean Development.* GACOR and CMC have long felt that we needed a NOAA in the State of California much like this subcommittee has proposed on a national level. On March 5, 1969, the Governor submitted Reorganization Plan No. 2 which would establish a new department called the Department of Navigation and Ocean Development.

Actually it changed the name of the existing Department of Harbors and Watercraft and transferred some ocean-oriented activities to the new department. It does not yet go far enough, but it is a start. This department becomes a legal entity on November 10, 1969, within a few days. Eventually it will be their responsibility to implement the COAP now being developed by ICOR.

*Department of Navigation and Ocean Development as CZA.* It has been proposed, and ICOR has endorsed the view that the new department become the Coastal Zone Authority (CZA) for California. At this time our Commission has not taken a ratified position on this subject. I expect this to occur at our December 5-6 meeting in San Diego.

A few of our Commissioners, as individuals, have expressed some doubt that this is the proper place for the CZA to be installed. One questions that it should be within a department of a single agency, in this case the Resources Agency. Another feels that perhaps we should expand the BCDC concept to include the entire State. Still another feels that it should be established along the lines of our State water resources control board with a master board in Sacramento and regional districts throughout the State.

I believe this subject will take up a significant portion of the time at our December meeting and I would expect that we will have taken a position when that meeting is concluded. At the present time we have not and there are some mixed views.

I would like to make one point clear, however, CMC will do its utmost to advise and assist in the implementation of whatever course of action is selected. If CMC expresses a view that the new department is not the proper place for the CZA to be located, and this is purely hypothetical, and if the Administration decides for other reasons that it is the proper place, the CMC will redouble its efforts to make whatever selection is made a workable and successful one.

*Summary.* We believe that with the close cooperation of the line departments in the State government, which we now enjoy, that we are moving forward in approaching solutions to the management of the coastal zone.

We believe that if CMC is to be effective it must retain its status of reporting to the Governor and the legislature. It cannot be subservient to any one department with its particular special interests, but must continue to advise and assist all departments with marine and coastal interests.

Things are moving. The COAP is being developed, and we recognize that we must keep pace with, if not ahead of, developments at the national level. On the other hand, we are keenly aware of the necessity for close cooperation and coordination with local government at this city and country level and by no means do we intend to slight the importance of coordinating with the private sector.

This entire problem of coastal zone management is a perplexing one that will tax the ingenuity of our best experts, but we believe that we have such experts, that it can be done and more importantly, that it will be done for the benefit of our State, the Nation, and the world at large.

I am going to skip the BCDC report.

Mr. SPRAGUE. Thank you, Mr. Dolan. Since that is his primary responsibility, the next speaker will, I am sure, focus on some of the interstate problems of coastal management.

Frank Gregg is chairman of the New England River Basins Commission with headquarters in Boston and has been since September of 1967. He is a graduate of the University of Colorado and prior to coming back to Boston to head up the New England River Basins Commission, he was vice president of the Conservation Foundation here in Washington.

I think he has a monumental task in Boston to coordinate all of the water management efforts of the six New England States all of whom are very individualistic and I hope that he will tell us something about what the New England River Basin does. Frank?

#### **STATEMENT OF R. FRANK GREGG, NEW ENGLAND RIVER BASIN COMMISSION, BOSTON, MASS.**

Mr. GREGG. Thank you very much. What I will try to do in these remarks is to offer some comments on the question of priorities which have nothing to do with the subject of this particular panel, but which I feel called upon to volunteer anyway.

I will argue that effective management will require joint State and Federal planning for use and development of the coastal zone and as distinct from State planning without Federal participation, which is the pattern that seems to be developing.

I will report to you on some of the ways in which the New England States and the Federal agencies who are members of our commission are trying to work to improve interstate and Federal-State planning and in the region, and I will offer comments on how our commission's efforts relate to some of the proposals that are before this conference and the Congress.

On the question of priority, everyone who has been involved in this national effort for the last 3 or 4 years to develop a system for effective management of coastal resources has recognized the unique values of estuaries and other natural systems in the coastal zone and everyone has also recognized and devoted explicit recognition to the conflicts and demands for use of the coast, but I don't see in the implementing proposals that are now before the conference any suggestions of the priorities that might be followed in attempting to reconcile these conflicts and I would suggest that public policy, and we are talking here about what Government can do for management of the coastal zone, should



accord to the protection and management of the natural systems themselves a priority over other uses.

Current decisionmaking processes tend to place these natural systems in a defensive position relative to development of initiative, the initiative for change. It seems to me that if these natural systems and the human values that they produce are going to be preserved, that congressional policy might well assert that it is the intent of the Congress to protect the value of natural systems in the coastal zone and to provide for the accommodation of developmental uses in ways which don't destroy the value of the natural systems.

The natural systems can't be replaced. Many of the other demands on the coastal zone can be met in other ways. Some cannot and this suggestion, of course, that a clear secondary order of priority should go to marine dependent uses as distinct from those kinds of uses which can clearly be satisfied elsewhere. On the second point, the question of joint Federal-State planning, the draft bill which was distributed for this conference envisions financial assistance to strengthen State planning and also implementation perhaps for the coastal zone.

The Marine Commission, the Magnuson bill, Mr. Lennon's bill, and the administration proposal announced a few weeks ago by the Vice President, all identify the States leading role in making decisions about the coastal zone. There is unanimity here and I have no objection to this finding. The State does have the logical constitutional as well as operational responsibility to establish the goals and objectives in the use of its own resources and it should lead to the formulation of plans for programs to make use of these. But the degree of national and regional interest in the programs in the coastal zone and the impact of Federal agency programs suggests to me that planning for use and management of these resources ought to be a joint State and Federal enterprise from the beginning and I mean in the field from the beginning.

There is a procedure implied in the bill which was distributed for us to read before this conference and also in Senator Magnuson's bill which suggests that Federal agencies, perhaps NOAA, the National Oceanographic and Atmospheric Agency or the Marine Council, will review State coastal development plans after they are prepared, and that this constitutes an adequate involvement by the Federal agencies in the actual planning of local goals and objectives.

I am pretty sure that this is not a workable procedure. There is a parallel in reverse in the case of river basin planning and I think it is apt here. You will recall that for decades planning for use and development of waters and related land resources in river basins was dominated by Federal agencies, by Federal construction agencies, and the States often participated by invitation and without any Federal financial support so that they could really play a decisive role in making decisions about the development of the rivers.

Over a period of time a consensus developed that this wasn't right, that the State ought to play a vigorous fully co-equal role and this ultimately led to the Water Resources Planning Act of 1965 which establishes an interagency Water Resources Council at the Federal level, which exists for the purpose of coordinating Federal programs in this field in much the same way that a new agency has been proposed for this field.

The act also provides Federal grants to the States for water and related land planning which are administered by the Water Council and the act provides for the establishment of joint Federal-State river basin commissions such as the one that I chair for the specific purpose of making the planning partnership meaningful in the field by getting joint Federal-State planning, the idea being that both States and Federal Government have program authorities which are going to be exercised in the management of these resources and that the only way to secure coordinated management is through joint planning, so that all the parties who have an interest, will share in the management agree on what the management is going to be.

I sense some danger that we may be repeating the pattern of the river basin process insofar as the coastal zone, in providing for and stimulating and initiating State planning without providing some machinery for organized and coordinated and funded Federal participation in the development of State coastal development plans under State leadership.

I want to emphasize that in suggesting this I am not implying any lack of confidence in the States. On the contrary, I am concerned that the Federal Government may have some difficulty in accepting as controlling State coastal plans unless these are prepared through a process that involves the Federal agencies and the interests that the Federal agencies represent.

Organized participation by Federal agencies is a way of securing the consent and cooperation of the Federal Government in the implementation of State plans. It doesn't take much imagination to see a number of Federal agencies which have natural responsibilities for certain uses finding it difficult to accept the controlling plans which they have had no opportunity to review until they have been finished and presented to the Federal Government as an accomplished fact, and I am quite sure that after the fact that Federal review by any Federal agency whether it is NOAA or the Marine Council or the Water Council, or any other Federal agency is not going to be an optimum way of going about this.

We have seen in the case of the State outdoor recreation plans prepared with Federal financing assistance under the Land and Water Conservation Fund Act, but most particularly in the development of State water quality standards and programs for implementing them and in the fact that Federal review of these standards that reconciliation between differing views at the two levels of government at this point becomes a contest between levels of government as often as it is a shared effort to try to identify the public interest.

I should note too that the Federal agencies do have a technical competence. They have data. If we could place these resources under State leadership in the development of State coastal development plans, we can substantially strengthen the depth and precision of the State planning and, while there are a few coastal States who have fully adequate professionally staffed planning capabilities for coastal resources, many States do not and, given the general scarcity of professional talents in the general field of natural resources, I think it will be some time before all the coastal States can be expected to attract and hold the staff that it may take.



The basic point remains however, that if we can get joint Federal State planning we will be bringing together in the field those State officials and those Federal officials who will be called upon to actually design and carry out specific management programs and the shared experience of joint plan development by State and Federal agencies is a substantial argument for joint planning.

Let me note briefly that the New England River Basins Commission is involved now in planning for use and development of the coastal zone of the region. The commission is an agency which consists of eight Federal agencies and representatives designated by the Governors of the six New England States and the State of New York.

The Congress this year, the House of Representatives, has just approved an appropriation of \$200,000 for the New England River Basins Commission for a commission study of water and related land resources of southeastern New England. This area was selected by the Commission as that subregion of New England which was most in need of joint State and Federal efforts to design action programs for the management of resources.

The area includes Cape Cod, Narragansett Bay, Hudson Bay, Boston Harbor, a great complex of coastal marshes and of course the rivers and their related lands in this area.

The planning program will be directed by the joint Federal authority set up by the Commission. The States of Massachusetts and Rhode Island have agreed to provide professional staff to assist in the direction of the study and it is our intent in this study to develop a joint action program with reports addressed both to the Governors and to the State legislatures, recommending the authorization of programs and the appropriation of funds as well as to the water resources council and the President and the Congress at the Federal level.

Through studies like these our Commission has assumed from the beginning that we have a statutory responsibility to prepare plans and make recommendations for the management of coastal waters and related lands. I should note that planning programs of these kinds tie together in rivers and estuaries in ways that are responsive to the point made by Mr. Sessums relative to the effects of river development on estuarine systems.

We have also been trying to figure out how to get joint Federal-State planning under way in other parts of New England, the Maine and New Hampshire coasts and the Connecticut and Long Island Sound areas. The State of Maine has provided some leadership here and is organizing and now has underway or will soon be on a Maine coastal development plan. They are picking several Federal offers to get money for this: 701, the Water Resources Planning Act, and perhaps one or two others.

The interesting thing about this is that the approach we have worked out between the State of Maine and the Commission is that funds will be also made available through the New England Regional Commission, an economic development body, so that our Commission can secure some coordinated Federal inputs in the State plan to accomplish the kind of coordination that I have been talking about before, and we hope to duplicate this pattern in other coastal areas of New England.

We have authority in being able to do it. The question is where the funds are to be made available. What we are trying to do obviously is to help the State and Federal agencies work together, not one plan and then the other sit in judgment but work together on plans that will reflect the needs and aspirations of the States, that will reflect regional considerations and the national interests as these are interpreted by Federal agencies and that are fully accepted as the basis for action programs by all participants.

I want to note that there is not much conflict between the draft bill that we have been discussing here today and the approach that we have been taking in New England. New grant funds from the Federal Government to the States for the establishment of State coastal zone authorities for planning and for implementation as far as we are concerned, simply strengthen the adequacy of the States to provide the kind of leadership that we would like to see them provide in New England.

The pending legislation does not preclude the participation of Federal agencies in State-led coastal zone planning and it certainly doesn't preclude the use of an existing body like the commission as a regional leader and coordinator.

The principle missing ingredients in the legislation now before the Congress in my opinion are two: one is a policy statement that expresses a priority for the protection and enhancement of natural systems in the use of the coastal zone and setting forth other priorities including priorities for coastal dependent activity and a clear statement either in law or legislative history that provides for a joint Federal-State planning as distinct from a separated State planning process from the Federal planning process.

I want to emphasize that the river basins commission is, like that in New England, and I should note that there is also one for the Great Lakes and the Columbia River Basin, in terms of coastal areas, is not a regulatory agency. It is not a management agency. We have no authority for these purposes and don't want it.

The utility of the commission is as a device for helping the Federal agencies and the States which do have authority to act to work more effectively together.

I think that is all.

Mr. SPRAGUE. Thank you, Frank. I am glad to finally learn what the New England River Basins Commission does. Their office is right across the street from mine, but it has always been a puzzle until now.

The last speaker on this panel is Mr. David Wallace, as the director of the Marine and Coastal Resources for the State of New York. Mr. Wallace is a graduate of Washington College and received his masters degree from the University of Maryland in marine biology. He is a member of the United States State Department Fisheries Advisory Committee and prior to assuming his duties in New York in 1962, he served in various capacities in the State of Maryland, including a 2-year stint as chairman of the Board of Natural Resources for the State of Maryland. Mr. Wallace.



## STATEMENT OF DAVID WALLACE, DIRECTOR, MARINE AND COASTAL RESOURCES, STATE OF NEW YORK

Mr. WALLACE. Mr. Chairman, ladies and gentlemen, my role here apparently is one which is more or less the median between the two earlier speakers, Mr. Dolan of California speaking on pretty much the intrastate problem, and Mr. Gregg, speaking on the interstate aspects of this coastal zone management.

It seems to me that we have a role which lies somewhat in between both of these viewpoints and my discussion will be along these lines.

The management of the coastal resources of the United States historically has been the responsibility of the individual States. I am emphasizing management and development. Federal and State laws have recognized the States' role. However, as interstate problems have arisen with increasing frequency in the coastal waters and resources have become shared by more than one State, the interstate compact has become fashionable to have in such matters.

Many of these efforts have been confined to planning activities with little delegation of management authority.

Some compact commissions have no authority at all either to plan or to manage as for example the three marine fisheries commissions along our three coasts. In other river basin commissions the structure and thrust has been strongly federally oriented, even though again the resources are considered to belong to and be the property and responsibility of the individual States.

The States have attempted to cope with the coastal management problem in many ways. Efforts from State to State have varied widely depending upon the financial resources and the legal structure in existence there.

Some States have given low priority to their marine matters since many people have had the mistaken idea that the marine resources were inexhaustable and the bays and the adjacent seas were capable of absorbing unlimited quantities of wastes and dealing with other concentrated abuses.

Usually numerous agencies within a State have varying interests in the coastal zone. Often in the furtherance of one goal by one agency the basic resources controlled by another are damaged or destroyed.

Local government has frequently tended to disregard altogether the importance of its marine resources and has failed to use whatever mechanisms that might be available to it in preserving the various values.

It seems to me that the concepts enunciated in the report of the Commission on Marine Science and Engineering and Resources having to do with the role of the various levels of government, are sound and should be heeded. It is my strong feeling that the States must take broad steps immediately to structure themselves so that they can bring all of their resources to bear on the multiple-use concept.

The Commission called these units coastal zone authorities and for want of a better name, this would seem a useful title at this point. The function of this agency and it seems to me it should be a dominant role, would be to develop coordinated plans for the preservation of our coastal environment and the conservation of our renewable and nonrenewable natural resources.

This authority should have as its goal to maximize the multiple use of our coastal zone and to minimize the areas of conflicting use. In New York the General Assembly in 1969 created the division of marine coastal resources within the existing New York State Conservation Department. The purpose was to strengthen our structure so that resources management and development would be concentrated and coordination could be accomplished.

Coordination is attained now in New York between State agencies through the Water Resources Commission on which all major State departments are represented.

The Conservation Commissioner is the Chairman of this body. It is obvious however, that further steps will be necessary to bring about the multiple-use concept in the coastal zone authority and plans are already evolving to accomplish this goal.

However, it is our feeling that the wise use of the resources of the coastal zone is not just a State responsibility alone. It must be shared also with our local government, preferably on an intrastate regional basis, and also interstate, or such bodies as the one that was mentioned by Mr. Gregg, with the closest kind of liaison and coordination and participation with the Federal Government.

I would like to discuss local regional planning for just a moment. In New York a substantial part of our marine area is encompassed in two counties, Nassau and Suffolk. A few years ago these two counties established a bicounty planning commission which in turn set up a marine resources council to analyze the marine problems and to develop local plans for their use and development.

This council is pressing forward in its planning efforts and has already contracted with a research group, the Travelers Research Foundation. So far as I know, this is the first effort of its kind on a local basis where this kind of effort has been mounted on a broad scale.

The mechanism exists in New York law for regional water resources planning bodies and steps are underway now to effect amalgamation between the local and State structure. Such comparable amalgamation can and should take place between the State and Federal Government. The States need financing support for research on our coastal resources in that manner. They need assistance to do the planning to carry out these mandated programs. The Federal Government can and should participate in this effort. It should be directly involved in programs which affect national interest and its participation is needed directly in dealing with those waters controlled jointly by several States.

I might say in New York many of our waters are abutted by several States, both in the marine area and in the Great Lakes. Here, however, the Federal role should be one of a partner to work with the States in developing appropriate plans for some further authority, it seems to me, to require compliance on the part of the participants once the plans have been developed.

Thank you.

Mr. SPRAGUE. Thank you, Mr. Wallace.

I congratulate all of the panelists for keeping as close as possible to the time limitations so that there will be time for questions. I would like to add something before we get to the questions.

I thought you might be interested in a program that we have in



Massachusetts which we call the coastal wetlands program, but I suppose that it could also be considered a coastal zone management program. This is a program which we carry out pursuant to an act of the Massachusetts Legislature which was passed in 1965.

The purpose of the act is to allow the Department of Natural Resources to restrict the use of coastal wetlands in Massachusetts so as to preserve them for their marine values and all of the other values that we know they have. To date, hearings have been held and restrictions promulgated for approximately 14,000 acres of coastal wetlands in Massachusetts.

This is not an acquisition program. It is a restriction program, almost a State zoning idea, and of the 14,000 acres that have been restricted, we have had only one appeal to the courts which is still pending, and which we hope we can win.

Now, if you have any questions or comments, if you would, please use the microphone as you did this morning and identify yourself and the organization which you represent and if it is a question, direct it to one of the panelists.

Mr. WILLIAM L. RUTHERFORD. My name is Rutherford from Illinois. I am afraid that much of this is going over my head.

Maybe I am just a country lawyer, but I am at a loss to understand, in this theory of communication between us and our friends in the Congress, how we are going to get the job done in the time we have got considering the crisis that is before our country with more commissions and appointments and inputs and outputs and reports and research, when there is so little attention given to some practical action that we need now.

We can write books. We can wait another 3 years and come back and have more stacks of data which I am afraid this is leading toward. I heard no comments about the Corps of Engineers that is spending tremendous sums of our money. We talk about relationships between the counties and the cities and the States and some of the Federal agencies a little bit as though they were removed from the big expenditures that I am familiar with for the alteration of our environment.

As a very practical matter, I think we have to get some better understanding of the operations of the Corps of Engineers and maybe some of their operations on the pollution matters. And I think there is another element that has to come into this consideration sooner or later, because as the population explodes and we try to find the room to take care of the industries and the atomic engineering powerhouses and recreation needs and all the rest, we are just treating symptoms.

None of us seems to find courage enough to ask the question that sooner or later is going to have to be asked and answered. I don't know how, but we have to get it out into the open because with the population explosion we have to have some population control. All the talk about pollution and disappearance of wildlife and the sea and disappearance of either replaceable or irreplaceable resources will mean nothing unless we get right down to the problem for our economy emanating from the complete explosion and mass of human beings.

I hope we get that in the record too.

Mr. SPRAGUE. Does any member of the panel wish to make a comment? No comments. Are there any other statements from the audience?

Mr. F. G. BLAKE. I am F. G. Blake, member of the California Advisory Commission on Marine and Coastal Resources. I want to comment on Mr. Gregg's presentation. I quite agree with him that participation of the appropriate Federal agencies in the planning process of the coastal zone authorities is quite appropriate. I also quite agree with him that the establishment of priorities in the resolution of multiple-use conflicts is also important, but unless I misunderstood him, I disagree with his comment that one of the things lacking in the legislation before us at the present time is the establishment of these priorities.

While I agree that the priorities should be established, I do not think they should be established by legislation. It seems to me that that is one of the principal functions of the coastal zone authorities that are to be established. The priorities in New England, or on Long Island Sound, will not fit the priorities that would be best for Chesapeake Bay, or the Gulf Coast, or California. It seems to me that the establishment of priorities should be left out of the present national legislation.

Mr. SPRAGUE. Would you like equal time, Mr. Gregg?

Mr. GREGG. Well, I think I would not want to yield on the basic point that if the Congress of the United States is going to express a statement of policy relative to the coastal zone that it ought not to state that it is the intent of the Congress that the natural system of values which is represented in the coastal zone is going to be preserved. It seems to me that if we can't recognize that the preservation and enhancement of these natural values is in fact a constraint on other uses of the coastal zones, then we can expect with something approaching confidence that ultimately these natural systems will be lost.

I think the defensive posture that we have been in where a cost-benefit evaluation is carried out tends to weigh the decision in favor of the alteration, because we simply have not recognized this ecological system as a system. When we keep taking away 1 percent here and a half percent there and 5 percent here we wind up losing something which cannot be replaced in order to provide services and values which in some cases can be satisfied elsewhere. It does seem to me that it is appropriate for the Congress to declare an intent to recognize and protect these systems as some sort of priority system.

May I add one sentence to my remarks before you begin. This doesn't mean that other uses are going to be foreclosed because obviously they shouldn't be.

Mr. SPRAGUE. Someone on the aisle there.

Mr. E. C. STEPHAN. As I understand it, we are meeting here at the request of the House Merchant Marine and Fisheries Committee, primarily on the subject of this bill which was given to us as we came in.

It is a bill that provides for State-Federal coordination, primarily through the implementation of the recommendations of the establishment of NOAA. This is an excellent approach.

Again, we have to thank the Congress for taking the leadership, first, in establishing the Commission that recommended NOAA, and now in establishing this much-needed way of coordinating the Coastal Zone operations around the country.

The thing that I question is: Can you tie this to NOAA, which may be 2 or 3 years away from establishment? I think the urgent need for



coordination between the Federal Government and the many States that are getting into the picture is growing all the time.

A year ago, the Federal involvement, financially, budgetwise, in the Coastal Zone was one-sixth of the total Federal pollution science program. It is going to change drastically if President Nixon's five areas of emphasis are followed up with appropriation support.

It will also change drastically as Congress interest in the oceans and in particularly Coastal Zone problems moves from science to public works. It is important that in the last few weeks the Congress that was talking, or the Federal Government that was talking a total of about a \$500 million science program in the oceans, authorized a \$600 million public works program to clean up pollution by building a better sewage disposal system in one area.

So the need for coordination between the Federal Government and the States in this whole marine problem is great, and there is no way of doing it at the present time. There is no one agency to which the States can come. There is no place where the Federal programs are sufficiently coordinated for the States to work with them.

There is no place in the Federal Government that is sufficiently aware of what is going on in the various States so that we avoid the very expensive business of all of the States going off in their own direction without the help the Federal Government might give in keeping them from repeating each other's mistakes, or in turning the wheel a number of times.

My point is: Isn't there some way other than waiting for the creation of NOAA to set up something to coordinate this Coastal Zone, to coordinate the Federal Government's efforts with those of the many States that are involved?

It occurred to me that we might get the National Advisory Committee on Oceans that was heavily oriented toward the States earlier than we could get NOAA. I recognize the disadvantage of this is that it weakens the case for NOAA.

Another alternative would be to expand Dr. Wenk's staff and give it a stronger coordinating capability. He certainly would need more staffing to do it.

The third possibility would be to give to some existing agency, such as the Department of the Interior, some authority and staff to help in this coordination.

A fourth possibility would be the States' efforts themselves along the lines of a States' group to meet here in Washington to help in this coordination.

I don't know which is the right answer, but I think one of the actions of this group would be to recommend to the committee that assembled this Conference urgent action toward setting up some means of State and Federal working together better than exists at present.

A large part of this problem grows out of the fact that over the past many years the Federal Government has been concerned primarily with space and defense, where there is no State action, really. They are having a terrible time adjusting to a program where a Federal program is not the national program. This is why we need this coordinating effort.

I hope this conference will urge the committee to which it reports

to again take the leadership of getting this sort of an agency set up, and I hope not waiting for what I think may be a long time before we find results.

Mr. SPRAGUE. Do any of the panelists have a comment?

Mr. GREGG. There are a couple of things going on in this direction right now.

One of the Senate bills does recommend this, but leaves open the question of administration of the Coastal Zone program, should the Congress ultimately decide to establish an agency. This is one of the obvious things that could be done to get some decent coordinating machinery at the Washington level.

Of course, I can't refrain from noting that those States that are blessed by commissions, such as the one I represent, have machinery for Federal-State coordination in the field. It is a great asset.

Mr. SPRAGUE. We are running a little bit over, but I will take one more question.

Mr. WILLIAM A. STERNKOPF, JR. Commissioner of the Port of New York Authority, representing the State of New Jersey. As a representative of the State of New Jersey I should like to place on the record some views concerning the potential impact on the ports within the State of New Jersey of the recommendations made by the Commission on Marine Science, Engineering, and Resources in its report, "Our Nation and the Sea."

These same views relate to the port aspects of any coastal zone management legislation to be considered by the Congress.

I ask this privilege for two reasons. First, because although much of the discussion at this conference is based on the Commission's report, examination of the program reveals that none of the sessions is concerned with the potential impact of the Commission's recommendations on the ports of the Nation.

Secondly, I wish to note that much of the economy of the State of New Jersey is based upon the efficient and effective planning, development, and operation of its two major port complexes, the Port of New York and the ports along the Delaware River.

In large measure, the dependence of the economy of the State of New Jersey on these two major port complexes is paralleled by the roles played by other major port concentrations in most of our other 30 coastal States.

I would also like to observe that the American Association of Port Authorities, whose membership includes the public agencies responsible for developing and operating the 75 major ports of the United States, is at this very moment holding its annual meeting in San Francisco.

For these reasons I will in my comments speak broadly rather than narrowly on the issues involved. I will be concerned with the potential impact of the recommendations made by the Commission on Marine Science, Engineering, and Resources on the ports of the Nation rather than specifically with the ports located within the State of New Jersey.

It is important to point out that this Commission did not include in its membership a single individual with experience and responsibility in port management.

I should like to begin by noting that although the Commission treated its general mandate broadly, as evidenced by the scope of the



report, its investigation was limited, in the area to which I will address myself, to the impact of merchant marine technology upon ports.

Because of this very limited focus, and a general lack of understanding or appreciation of the business of ports and shipping, the Commission repeats the classic error common to most recent Federal commentaries suggestive of Federal port planning. This error is the mistake of relating specific trades involving highly specialized deep-draft tankers to the general port requirements of the United States.

The error is compounded by the indiscriminate grouping of container-ships, hydrofoil, and hovercraft with the supertanker and the assumption that such vessels are all components of what the Commission felt to be a common port problem, namely, the capability, or lack of capability, of our ports to accommodate all of these different types of vessels.

From this followed the recommendation by various Federal agencies that what is required is a drastic departure from traditional and historic approach toward port development in the United States.

The Commission's report states that supertankers exceeding 300,000-ton capacity are now on the building ways in Japan, specifically designed for the carriage of Middle East crude oil to Western Europe and to Japan, and then casts these against the depth of a vehicular tunnel in Chesapeake Bay and dredging costs in New York and east Texas. In doing so, it emphasizes a specialized and unique problem in order to justify a conclusion that Federal planning and control of the Nation's ports is essential for the future of maritime transportation.

I am pleased to note that, as a result of strong factual presentations by the AAPA to a number of agencies, the containership is no longer identified as a superdraft threat of the same category, a fallacy in earlier efforts of this kind.

Except for the possible need for a relatively few regional oil unloading terminals served by adequate channels to accommodate deep-draft tankers, the ports which will handle containerships will not require channel deepening of major magnitude and cost.

While I am in agreement with the statement made in the report that "a port for containerships in the heart of the city adds to the traffic problem and to the cost of transporting goods out of the port," I should like to point out that if the Commission had thoroughly studied the existing and planned container facilities, it would have found that they are not being located in the "heart" of cities but are generally being built more on the periphery of the cities, where the necessary upland areas and rail and highway access are available.

It follows from such misconception and misdirection that the issue of greatest concern to those engaged in port planning, development, and operation is the underlying rationale of the port phase of the report. What the Commission is proposing is Federal study and presumably Federal direction and possibly control over the entire far-ranging field of port and terminal development (including land transportation facilities) which have been historically and successfully accomplished by non-Federal interests.

That is unacceptable to the port industry. It is a complete reversal of the traditional relationship between Federal and non-Federal interests and responsibilities in this field of activity.

The Commission's report also states "the maintenance of a major port in every major coastal city is no longer justified." Implicit in

such statements is the idea that the Federal Government should allocate or mandate port activity as to type, scope, and location of all port-related facilities and that this is a process superior to the benefits of healthy and vigorous competition which have in reality spurred the pioneering of new techniques in developing the ports of this country, particularly since World War II.

The provision of satisfactory facilities and services will be the best way to determine which of our ports will serve as gateways for the Nation's foreign trade.

It is a fact that each port is a driving economic force in its local hinterland and a great portion of the Nation's industry is centered in the seaports and their surrounding areas. Significantly, almost every city in the United States with a population exceeding 100,000 is located on navigable water.

I have felt it important to express these views on behalf of the port industry as the Subcommittee on Oceanography and the Congress give consideration to coastal zone management legislation. So, too, we hope that the States themselves will keep in mind the vital importance of ports to their economy, employment and general welfare.

I respectfully urge, therefore, that any coastal zone management legislation which may be passed by the Congress and the individual States include appropriate recognition of the importance and responsibilities of commercial ports in their handling of the Nation's ocean-borne trade and authorize representation of these ports on the membership and advisory groups of coastal zone authorities.

Mr. SPRAGUE. Thank you very much, sir.

The gentleman in the second row.

Mr. KNAUSS. I would like to address myself to the remarks made by Mr. Gregg for a moment.

I am not sure that there is very much disagreement with the opinion expressed by the Commission and that of Mr. Gregg. Let me just outline the reasons why we, on the Commission, went the path of not asking formal Federal involvement.

It seems to us that the most important aspect of the problem was the development of strong coastal zone authorities in each State. Granted that the jurisdictional responsibility is a complex one for local, State, and Federal authorities. At some point there will have to be Federal review, both for the national interest; that is, the public national interest, as well as the Federal interest, which includes the various statutory responsibilities of Federal agencies.

It seemed to us that any coastal zone authority would want to have, and would have, cooperation in their planning with the Federal agencies that are involved. But it did not seem to us that it is an all-or-nothing situation.

It seemed to us probably better not to have a formal involvement because at some point you have the Federal Government sitting in review of these matters. It seems to me it might not be in the best interest of the Federal Government to be involved formally with the planning and then also be involved in a review capacity. It is for this reason that we went the way we did.

Mr. SPRAGUE. Thank you very much.



I think any other comments will have to wait until panel 4 complete their presentation. I would like to thank the members of panel 3.

We will take a 5-minute break at this point.

(Brief recess.)

#### PANEL 4—FEDERAL AND STATE ROLES IN THE COASTAL ZONE

##### MODERATOR

Thomas A. Clingan, Jr., Counsel, Oceanography Subcommittee, Merchant Marine and Fisheries Committee.

##### PANELISTS

Alfred A. Porro, Esq., attorney at law, Lyndhurst, N.J.; Charles F. Schwan, Jr., Washington, D.C.; Edwin T. Haefele, Resources for the Future, Washington, D.C.

Mr. CLINGAN. Ladies and gentlemen, would you be seated, please?

In the face of an emergency, I am going to press myself into service as a moderator for this Panel on Federal and State Roles in the Coastal Zone.

As you all know, this is a matter of considerable interest to the committee, and one of the crucial questions that will have to be answered before we can proceed with any kind of a gainful management system.

Before introducing the members of the panel, I would like to clarify one point in case there is any doubt in your minds. That is with respect to the draft of legislation that is here in this room today.

Let me assure you that this is not a hearing on Mr. Lennon's bill in any way. It is out for discussion. I don't want anyone in the room to feel compelled that he has to speak for the bill or against the bill.

As a matter of fact, it is not even a bill at this point. Should it become a bill in the future, it will go through the usual legislative process and regular hearings will be held on it at that time. An appropriate time will be given for anyone who wants to speak for or against that particular legislation.

Our purpose here is to exchange information. So please don't feel that you have to speak for or against any draft legislation that is in this room.

Now we will proceed to our panel.

I would like to introduce to you first Mr. Alfred A. Porro, Esq., attorney at law, from Lyndhurst, N.J.

#### STATEMENT OF ALFRED A. PORRO, ESQ., ATTORNEY AT LAW, LYNDHURST, N.J.

Mr. PORRO. Thank you very much. It is certainly a pleasure to be here.

I am usually given the job of being brought to conferences primarily involving State representatives, because somebody has to be the unpopular guy, and that is usually me. My views are not the popular views usually, and, as a matter of fact, this is not the first time that the moderator didn't show up when Al Porro as going to be on the panel.

I am going to be as frank as I possibly can be with regard to my views, and I will warn you right now, know me as Al Porro, because

I am sure you will be calling me a lot of other names a little bit later on.

I see I have some of my good friends in the audience, who have run me out of other places before, like the good old friend from Louisiana, Dr. St. Amant, and also, I think, Dave Adams is floating around someplace. I understand, however, that Dave, since he has been in Washington, has started to get a little bit more to my side of the thinking; not completely, though.

The Commission report, and let's start at someplace where I think we can agree, I think we can agree that the Commission report should certainly be held as one of the most comprehensive studies and a fantastic job of facts and the presentation of facts, and also a fantastic job in terms of analysis and progressive recommendations with regard to legislation and management, Federal review, and the like.

I had the pleasure of doing some consulting work, reviewing work, with the Commission, and, for that reason, I would like to take this opportunity to express just a slight dissent.

I know that Crane Miller is in the audience. Crane is from the Smithsonian. He is an extremely capable attorney. He did not agree with me at the time that I expressed this to the Commission, and I don't expect him to agree today.

I am of the opinion that every court has one guy who dissents to something. I am going to take a very small portion with regard to that report and dissent.

I think that the report, the proposed legislation and the proposal that you are reading here today, treats too gingerly and too optimistically the question of voluntary State participation. I think it treats too gingerly and too optimistically the question of Federal-State relationships.

I think in this one small portion of the report it goes contrary to the very strong, creative and progressive recommendations that are made throughout the report.

I do not think to premise any program of the magnitude that we are discussing, with the need that everyone readily admits is there on some voluntary participation, on some illusory State authorities that might come into existence, is at all a good premise to start off from.

I think that any such voluntary program is much too weak to cope with the fantastic job that is set forth as being its mission. Certainly, we have stripped them already, before we start, from being effective.

I have found in my short experience that any such type of permissive action is usually not that tremendously effective.

I think we can project, and I am not talking to the gentlemen here who are in their individual States doing a fantastic job, I am not saying that we should start stripping away any areas of sacred States' rights—I am saying that to draft a bill and to make recommendations, and to say that the core of the bill is going to be a Federal grant—I am saying that that is nothing more than a teaser. It is not a solution. It is the old faithful Federal teaser of a Federal grant.

I have submitted a written statement, which I will not go into too much detail on. Particularly, I will not discuss with you the need, because I think you could tell me much better what the need is. I think



you have already expressed from the floor today what the urgency is, and the classic chant of balanced planning.

This need, as I see it, and this demand, as I see it, knows no boundaries. It doesn't respect those lines that we have drawn on the map and called the United States and the boundaries that designate the various States.

If we approach it on that same archaic approach, I am afraid that we will be here again and again talking about the same subject matter.

I am also not going to try to impress you with the public interest, nor am I going to define for you the public interest, because that usually ends up being a tidy mess. But I think that it has been stated from the floor, and I would like to emphasize, there is truly a national interest here. Yes, there is a strong local interest, and yes, there is a strong State interest.

But I submit to you today for your consideration that there is also an overriding national interest.

What public are we talking about? What interests are we talking about? I will ask them rhetorically, because to try to get in and try to define it would perhaps only bore you and go over old treatise material that you have read time and time again. There is truly, however, a national fabric here.

There are many in my profession that will dispute that the Federal Government can go to perhaps the extent that I am going to propose to you shortly, and there are many who will say this just doesn't sound like it fits into the old categories of what we have learned in law school.

But I say to you that this national interest that we are talking about provides the jugular vein for national and Federal jurisdiction. The very nature of this subject matter—I repeat—knows no State boundaries. We are talking here of a problem, at least from what I see, which can only in the ultimate end be treated in totality, and we must then treat it as a totality, and we must then treat it out of necessity with a strong Federal interface.

You have heard and you know, and most of you have lived with, the present maze, the present Federal maze and the present State maze that exists. I don't talk it down. I think we can be very, very proud as to what has been accomplished.

I think we are here because we are all proud of our individual roles in trying to help accomplish more and look for a further direction. But to a great extent we have sort of a disjointed parade with many agencies or bands playing varying tunes, and many of them duplicating lyrics.

On the State level, it isn't fair at all to criticize, when we have some very, very productive legislation that has come out of many of the States.

I usually get in trouble by naming some of them, but I will. I have a lot of respect for some of the things that I have seen come out of California, Massachusetts, and Rhode Island.

But in each instance it has been a piecemeal type of approach. Every time we turn around and pat ourselves on the back in the individual States with regard to the particular work that you individuals

are doing in your individual scope, I think we have to recognize that that is a small portion, and it is only a piecemeal approach, and that we have not as yet, truthfully, started to put together all of these pieces.

It is my feeling that we now have the opportunity and we now have the base, without doing any further studies—and as was pointed out here before, we have to and should move now.

I don't know what more of a comprehensive study we would want than the study which was put forth by the Commission to use as a foundation.

I don't think we have to waste too much time talking about the old alternatives that are always put forth, the old, weak coordinating body, the new agency that everybody screams about. I think we are ready to move, and I do not think we can move if we keep ourselves in just the cubicles of the State boundaries.

I submit that in most instances the State programs have been piecemeal and have not taken the total picture. I want to give you a little example. I am going to use my home State of New Jersey because I know they will forgive me, because they have been forgiving me for years over there. They know truthfully that I love it.

I am going to give you some facts. I think you can relate this pretty much to your own individual States. So forgive me, New Jersey, I am not particularly talking about you.

New Jersey has approximately 350,000 acres of estuarine areas. It is a major coastal State, and it has tremendous pollution in some of its major estuarine areas, such as the Raritan and Newark Bay area.

Recently in New Jersey, there has been tremendous public interest with regard to these estuarine areas. That interest has been stimulated by progressive State officials. It has been stimulated by private industry, private interests, and the conservation groups.

What is happening? Proposals came forward to the legislature rejecting the opportunity to institute a statewide estuarine planning program. The legislature was unable to do this, and I submit it was primarily because of political reasons, the legislators giving great talks with regard to how important this was for the northern part of the State when they came from the southern part of the State, and what a great Utopia on overall plan would be for a particular part of the State.

On the other hand, we had two departments competing for the interest in the estuarine, those departments being the Department of Conservation and Economic Development and a new department that was created in New Jersey, the Department of Community Affairs, both two completely different missions.

So what happened? An area of 18,000 acres out of the 350,000—and perhaps that is not a bad compromise—was put up and I say was sacrificed. That 18,000 acres sit in the Hackensack Valley meadowland area, a tremendous estuarine area.

It was stripped away, virtually stripped away, from the Department of Conservation and Economic Development and put in the Department of Community Affairs under a new State agency which was going to take over all of the planning and all of the development in this particular area.

A new city was going to be created in New Jersey. It was going to



be ripped away from the rest of the estuarine system—and that word “system,” by the way, I got from Dave Adams. I am very happy it fits into my talk better than it does into his, usually.

It was ripped away from the State system and now we are going to create a new city in New Jersey. There were many cries, “Gee, I don’t know if legally you can do this. You can’t just rip this away from the rest of the estuarine area and stick it into a State agency.”

By the way, the State agency will govern completely this estuarine area when it comes to planning, when it comes to financing. Related to it, also, it will have a word to say with regard to clearance of titles in that area. Titles always raise a good question in the New Jersey marshlands, because in this same State while this was happening, our Governor, who, by the way, has been a very progressive Governor, put forth the well-known term today, a “moratorium.”

There is going to be a moratorium in the State of New Jersey with regard to riparian grants. In New Jersey, I suppose it is similar to many other States, as my research has shown, in certain questionable areas the State government will grant away its rights with regard to property rights to private owners.

So this moratorium was called.

However, it was soon discovered that it was only called for the Hackensack Valley meadowland area. It was not called because of any conservation purpose. It was called so that the State agency could get its feet on the ground and so that the State agency could start building anew, without the problem of private ownership in that 18,000 acres.

But then our commissioner of conservation and economic development was getting pressure from some conservation groups and he called his own little moratorium. Soon it was discovered that that moratorium was only called for the lower part of the system, the southern part of New Jersey.

So now we are living with two alleged moratoriums called by two different individuals in the State hierarchy, and in the meantime, in the middle of the State, it was discovered that 16 acres was conveyed to private interests, \$16,000, and on the same day reconveyed for \$710,000, and 2 weeks later mortgaged for over \$4 million.

In one State we have had a tremendous difference in standardization. We are working within one set of State boundary lines.

I would submit that today we must recognize that we are living with a new jurisprudence and a new look at the Constitution, and a new look at government, and a new look at political structure. We cannot be limited by old cliches.

I made the mistake in Williamsburg. I said old cliches like “States rights.” I am not saying that here today.

Back home, I represent many of the municipalities that are involved in the battle with the State, and they call me “the guy who is sticking up for home rule.” So there isn’t really a conflict here, because what I am saying is that government today can no longer be put in little cubicles and surrounded by certain boundary lines.

Government today has to be looked at in terms of problem areas and in terms of function, and where they overlap we have to recognize that they overlap, and legal jurisdictions have to recognize that they are going to overlook.

Something occurred down in Williamsburg that I think is very, very

important. We took the time out to start listing each governmental function that occurred in the coastal zone. We were kind of surprised to find that there were just many, many of them that fell into a peculiarly local nature, many that fell into a peculiarly State nature, and many that fell into a peculiarly Federal nature.

Then there was that gray area that, depending on what your thinking was, it fell either into all the categories or two of the categories.

What I am saying to you is, let's not fall into that same trap in drafting new legislation in terms of just creating some State authorities. Let's not fall into that cubicle trap. Let's not fear venturing a little bit more.

Whether you like it or not, we have to recognize that there are many, many Federal arms that are already in the individual States, already in this coastal zone. Why? To a great extent, out of necessity.

I don't have to start itemizing them here for you. You all know the various Federal agencies and functions that fall into that coastal zone, that have jurisdiction that is well recognized and well known as being recognized in our individual State boundaries.

I submit that there is—and I am not here to debate it from the legal standpoint; I suspect that someday this will occur before some of our courts—that there is valid, legal basis at this time in our history to extend that Federal jurisdiction on the basis of the national interest in the coastal zone.

And, yes, I am interjecting the Commerce clause a little bit more. Yes, programs I am talking about stretch, perhaps, in some of your minds, some of the other clauses of the Constitution. We don't have the time to get into the details of that particular theory.

I would like to end by saying to you that I would like to propose today that we forget about this voluntary program, and that we set up truly a Federal umbrella, and that this umbrella be vested with the duty of coordinating the Federal maze, and acting as a top of the pyramid for the regional or "system" programs.

I would like to suggest also that those areas not be set up in terms of State boundaries, but rather in terms of regional boundaries.

I can think, without being a professional in the scientific and technical end of it, of five good regions, and I am sure that technically there are others that can better set up five regional areas to be treated on a regional basis, and that within these regions, yes, there would be sub-regions, and yes, there would be State representation.

I have submitted the details of that proposal in detail today. Eventually, I think, when the record is printed, you can go through it and criticize it. Unfortunately, I am not going to have time to go through the details of it other than to say to you that it is not a proposal to give Federal domination, but it is, in fact, a proposal to attempt to coordinate, to attempt to reflect some genuine national interest, but on the other hand, to provide Federal leadership with a responding responsibility in the States, and vesting in the individual States the powers that they presently have.

I don't think we are at the point in history when we have to start being jealous about the powers. They all coexist.

But ladies and gentlemen here today, I would like to say to you that it would be a big mistake to pass legislation that is going to be



strictly on a voluntary basis. I agree with Mr. Gregg that this is a problem for a joint effort. That is what I propose.

Thank you.

(Mr. Porro's statement follows:)

STATEMENT OF ALFRED A. PORRO, JR., ESQ., LYNDBURST, N.J.

#### I. A DISSENT

The detailed study of the United States on Marine Science, Engineering and Resources has recently released in its report "Our Nation and The Sea" and the supplemental volumes which are to be hailed as the most comprehensive study completed to date regarding the marine resources and problems connected therewith challenging this country. The presentation of the facts and statistics as they are in the estuarine and coastal zone is outstanding and shocking indeed. The comprehensive analysis of the various threats to the estuarine and coastal areas truly irrefutably presents a case for the need for balancing of interests and balancing of conflicting uses. Likewise, the general proposal of the Commission respecting the management of these crucial areas must be complemented, together with the proposed legislation, especially its definition of the national policy, objectives and guidelines and its concept of federal review. However, as one of the consultants that worked with the Commission, I would like, at this time to exercise the privilege of dissent with one small concept, yet perhaps one basic aspect of possible success or failure to the approach. It is respectfully submitted that both the report and its supplement treat too gingerly and too optimistically the subject matter of state participation and federal-state relationship. As compared to the Commission's strong and creative approach throughout the report and throughout its recommendations in this respect only a token attempt is taken here. The proposal of creation of state coastal authorities is sound and progressive. However, the concept of voluntary participation only is too optimistic and far too weak to cope with the massive result that is desired and expressed throughout the other sections of the report regarding the needs and the public interest in the estuarine coastal zones of the country.

The gravamen of the proposal before this sub-committee today is likewise permissive, following the lines of the Commission's proposal. It provides for the administrator of the National Oceanic and Atmospheric Agency to deal with and review such proposals for long range planning in the coastal and estuarine areas that may come forth out of imaginary and hopefully actual coastal authorities that may be formed by various states of the Union. Guide lines and objectives are set forth. It provides for the old faithful federal inducement of grants and/or federal guarantees; this is a teaser but not a compeller. Hopefully, through the availability of such grants federal policy can be effectuated and the national interests protected.

A state, regardless of how dramatically it may be injuring the national interest as a result of its poor treatment of its estuarine or coastal area and regardless of how tragically a particular system of estuaries may be affected by its action or lack of action, cannot in any way or manner, under this proposal, be compelled to comply with the federal guide lines, planning or proposals for the area.

It is in this respect—it is with regard to this weakness—it is with regard to this basic approach that a dissent is cast at this time.

The scales of justice, the weighing of interests and the governmental process has shown little bridging with the scientific world here. Nor has the marine resources taken much cognizance of the artificial and vaguely defined jurisdictional boundaries, whether they be local, state or federal.

The crux of the development has been without proper or balanced planning, without any process of sharing or conservation, and without true economic and environmental consideration of values. Environmental changes, due largely to technological development and advanced engineering techniques have been principally without legal and administrative control. Here controlled balanced standards and guide lines have been neglected. On the other hand, natural changes continue to effect short line erosion, loss of nutrient areas and diversions in circulation—again, without respect to standard jurisdictional and governmental boundaries.

Estuarine pollution has justifiably become a matter of tremendous federal government concern and study. For years light cries have increased in volume

and tone respecting the trend of estuarine deterioration by interstate pollution. Now federal and state government has been attempting to gain knowledge needed to regulate the same. A great variety of approaches are being attempted.

Technological, scientific, commercial and industrial advances and progress have found man in a position of out-witting himself. Industrial waste and detergents each invade the wetland, effluents pour indiscriminately and reclamation schemes trap and spread pollutants, all without any respect to the standard governmental jurisdictional boundaries.

Yes, the multiple use dilemma continues to expand without effective national or regional regulation. The absence of a governmental structure vested with the responsibility and power to fully meet the challenge is shocking. A strong and effective and compulsory type of entity is needed.

### III. PUBLIC INTEREST-NATIONAL INTEREST

The public interest of which we are concerned is a broad one—it is a local one; it is a state one; and overridingly it is a national one. An attempt to define "Public Interest" is always a tidy mess. Thus, no such attempt will be made here. However, the tempo of the public interest can be felt rhetorically in a statement made by General Woodbury right before the conference of the National Council on Marine Resources in Williamsburg, Virginia :

"What is this public interest we are talking about? What public are we talking about? Are we talking about the local public—the people who are employed in the Coastal Zone, who live in the neighborhood, who have homes along the shore, the people who commute into the area for jobs? Is this the public we are concerned with? Or is it the using public, people who come from a long way off to swim or to use the marinas or the other facilities of the ocean or the lakes? Is it the users of the facilities that are there or is it the users of the facilities that can't be there because the use has been pre-empted by some other use? \* \* \* There is a real need obviously, for research of and research in the public interest if the determination of public interest among competing interests particularly where fish and wildlife and aesthetics are concerned, is to be based on facts rather than on emotions. And this research is needed by whomever and however decisions are made in the public interest. \* \* \* And then we need to develop a rational approach in order to make a determination in the public interest. We need to be able to analyze the effects of these alternatives. We need to be willing to plan together and to communicate one with another. It is not enough to just oppose development. \* \* \* Obviously, the use of the coastal zone is a matter of concern to all elements of our national fabric. All elements have a role in the planning for and the regulating of the use of this Coastal Zone. \* \* \*"

The public interest in any given instance could be a local interest—it could be a state interest and it could be a federal interest. In the estuarine and coastal zone it is all, i.e., local, state and federal. The federal interest reflects the overriding national interest which provides the legal and constitutional jugular vein for federal jurisdiction. Repeatedly, the nature of the estuarine and the problems that are being generated therein are stated to be unimpressed and unimpaired by state or local boundaries. The pollution in the Raritan River Basin in New Jersey must affect the coastal and estuarine areas of Staten Island and Delaware. The extinguishing of valuable fish and living marine resources in New England must affect the interest of those citizens in North Carolina. The conservation of a basically dead estuarine area in Virginia must affect the present housing need of Washington, D.C. The coastal and estuarine zone constitute a system—they constitute an interrelationship between all states; they constitute a problem which can only be capably handled by a true and effective federal interface. This zone is truly one for national concern—it truly is a concern of the national interest.

### IV. PRESENT MAZE—LOCAL, STATE AND FEDERAL ROLES

The present maze of governmental roles, local, state and federal in the coastal zone are basically disjointed and uncoordinated. Essential to a truly effective system and structure is a set system, responsibility, control, coordination, financial strength and public support. The system must be both flexible and rigid. When put to this formula, the present system sadly fails.

A disjointed parade of different bands playing varying tunes and duplications of lyrics appears to be the picture of the federal maze. The activities and programs of the agencies have proven to be individually credible and essential. Approximately five departments of the Executive, with numerous sub-bureaus and branches and related foundations and institutions, presently participate in



the protection of the coastal and estuarine areas. Here the individual entity varies in function and jurisdiction; great variance appears in effectiveness. Individually none constitutes a fully and independently effective system of coastal zone management. Combined, without coordination, a like result has occurred.

Although some state or local programs have reflected substantial strides to more effective estuarine planning and administration, the very nature of this zone disregards technical state boundaries. The jurisdiction of no governmental body coincides with the boundaries of the coastal zone. The multi-state nature of the estuarine is reflected by the unrestrained animal and marine resources, waterways and uses visiting from state to state.

Yes, a great majority of the challenges presented by the coastal zone could be handled on the state or regional level, providing the benefit of a close local familiarity and expertise with the problem area and a more divers situation. Yet, the short-comings of such a state authority are obvious; no single, continuous plan of development for the whole coastal zone could result; conflicting estuarine land title and use laws exist; financial inadequacy is likely to occur in many areas.

Thus, the present federal maze, combined with the individual state approach, merely compounds the complexity. Yet, it would appear that a means of coordinating the activities of all of the existing functional agencies would be an effective solution. Coordinating bodies are inherently weak. No independent strength exists, but rather must be derived from support of other levels, appropriated out of the budgets of other bodies and agencies.

Other alternatives readily emerge. The creation of a new agency to handle the whole zone. Oh, no. To contribute to the overwhelming maze of existing agencies and bureaucracy would be a total sacrilege. Yet such an agency could have as its sole mission and purpose concentration on the estuarine and coastal zone as a whole—treatment of all of the related problems, planning and balanced development of such areas. What about duplication or usurping of activities now carried or by existing agencies and levels of government? Loss of collateral research and experience of related agencies? Perhaps the responsibility should be delegated to an agency, now handling a segment of the problem. Yet this would detract from the overall major aspect of the program.

Although some states have commendable programs for various aspects of the estuarine and coastal zone, such as fisheries, recreation, conservation and economic development, few states have truly effectuated state wide comprehensive programs. Basically, it can be stated that in this regard the state governments have failed. This is not to overlook the progressive steps taken in such states as Massachusetts, California, Rhode Island, and some other states. A study of the whole picture and the various states individually forces the conclusion that on the basis of past experience alone, a voluntary state authority system would not be effective.

Many contradictions in policies, departments, motives and approaches make this obvious. The pattern in a great majority of the states is absolutely ineffectual insofar as an over-all state wide program is concerned. A case at point, taking the liberty of utilizing my home state, that is the State of New Jersey. New Jersey has approximately 350,000 acres of marshland and is an important coastal state. It is plagued with extreme pollution in the Raritan River Basin area and the Newark Bay area. Perhaps some of the most valuable estuarine areas in the country could have been found in these areas and undoubtedly some of the most valuable estuarine areas in the country still exist in this State. Recently, much attention has been given to the estuarine areas of the State, and some extremely progressive concepts put forth. However, the inability of the State Legislature to enact a state-wide program and the tremendous competition between two of the State Departments involved, namely, the Department of Conservation and Economic Development and the Department of Community Affairs resulted in a true debacle of a program. It was proposed that a state-wide commission be formed to balance the planning of the 350,000 acres and to protect the same from indiscriminate development. It was proposed that the continuous estuarine enjoyed by the State of New Jersey, which stretches from the northerly portion of the State through the estuaries of the Newark area through the marshland of mid-state in the Raritan and Middlesex areas trots on through the southerly portion of the State, all were basically in the same class, nature and need. State politics prevented this. Instead special legislation was proposed and rushed through taking a mere 18,000 acres and sacrificing the same on the basis that the particular area in question, namely, the Hackensack River Basin, was in need of development for purposes of housing and the creation of a new city. Basically,



the control of the estuarine was immediately transferred out of the Department of Conservation and Economic Development into the Department of Community affairs.

Needless to say, the function, purpose and mission of these two Departments are extremely different. What was once an area rich in marine resources and in need of the true balance between the interest of conservation and economic development, was carved out and deicated to a new department, which department does not contain as its basic mission the technical, scientific and economic acts of the estuarine, but rather the mission of the creation of new cities. A dedication by this local and special legislation immediately relieved any political affairs in the other 330,000 acres and areas of marshland. The politicians had done their piece. The other areas could now remain undisturbed. In the meantime a mounting dispute remained unsolved with regard to the title aspects and ownership in the same Hackensack Valley River area. Different title standards are being used for different areas of the State. For example, in the early part of 1969 the Governor declared a moratorium with respect to any further riparian rights; however, it was recently discovered that this alleged moratorium was meant to specifically and merely apply to the area that had been sacrificed, namely, the 18,000 acres and not the balance of the state. In the meantime the Commissioner of Conservation and Economic Development declared his own little moratorium which was recently discovered to have been meant only to apply to the southern portion of the State, concerning himself primarily with the conservation aspects and interest in the same. In the meantime while the Governor's moratorium affecting the Hackensack Valley was in effect and while the Commissioner's moratorium respecting the southern estuarine was in effect, a flagrant violation of equal protection of the laws and due process fermented and exploded. In the middle, powerful political area of the State, a certain alleged riparian grant or quitclaim of marshlands are discovered to have been conveyed to a company for the sum of \$16,000, reconveyed by that same company on the exact same day for the sum of approximately \$710,000.00. This typifies, to a great extent disjointed, uncoordinated, politically influenced state approach and is reflected in the other parts of the country also. Ineffectual piecemeal attempts, ignoring the continuous nature of the estuarine area, ignoring the interdependency of the same and the likeness of its various problems, such as pollution, balancing of planning, development and conservation. Also ignoring the pleas of illegality of such special and local legislation and the violation of the concepts of equal protection of the laws and due process in the United States Constitution.

On the other hand, the financial inability of the states to manage the needed statewide program is clear. Ironically, the outward justification which was used for public relations purposes in the New Jersey situation was that of a mysterious, presently unavailable, Federal grant. An illusory federal grant was put forth as the full and complete justification for the piecemeal special legislation that attempted to carve out 18,000 acres of the New Jersey estuarine system—truly a sacrilege to the national interest approach.

#### V. A NEW JURISPRUDENCE

A dissent is registered with regard to the Commission's approach and the approach of the proposal before this subcommittee today which has as its basis the mistaken attitude that the federal government should not and cannot delve more strongly across the sacred state jurisdictional boundaries. The program insofar as the organizational aspect is much too strongly state oriented and noticeably lacks federal effectiveness.

It is time to recognize that a new jurisprudence has been borne, quite unintentionally to some extent, yet it is here. A new philosophy of law, a new philosophy of political structure, a new philosophy of organizational mechanism, and a new philosophy of coordinating the whole "system" has in fact emerged through court decisions and legislation. As pointed out by Dr. David Adams, the language to be utilized should be "a system of management" and it should be recognized that "the jurisdiction of the coastal zone does not coincide with boundaries." The true evaluation of the system requires us to scrap to a great extent the old cliches that are now being abused and merely used to impair a truly progressive and effective program. The concept of "State's Rights" is a sacred one indeed, yet to allow it to be utilized to allow a more active federal role in an area that undisputably requires it, is disgraceful. The trap of being bounded by existing structures and existing concepts is dangerous when consid-

ering management of the estuarine area. The trap of locking federal control in an area where the need for the federal catalyst, coordination, leadership and capacity is obvious, must not be allowed to be successful in this instance.

Our concept of government has changed greatly throughout the last few decades. It is no longer a series of self-contained cubicles bounded by local or state artificial boundaries. As stated by Commissioner Robert C. Yosi at the recent Williamsburg Conference, "Government should be where the action is." Which government? The government which contains the best capability to meet the particular problem or problem area at hand; the government which is best equipped to handle the particular challenge presented. When dealing with a multi-nature problem area such as the coastal and estuarine zones, a multi-level governmental "system" is necessary. A network which effectively creates an inter-relationship and interface between all levels of government which necessarily come in contact with the estuarine and coastal zone. Namely, an inter-relationship between the local, state and federal government which would effectively navigate to each level that particular function which it is best suited to handle and to conduct itself both individually and in an overall coordinated system. This cannot be accomplished by fearing to venture, to some extent, with new concepts and true innovations.

Presently, whether it be recognized or not, the federal control, with regard to various aspects of the estuarine and coastal zone is deeply indebted. As previously stated, approximately five executive departments, twenty bureaus, and many federal councils and institutions concerning itself in these areas have already transgressed traditional boundaries.

The underlying considerations and the underlying fear of potential legal dispute in the approach being set forth at this time, are to a great extent exaggerated and unjustified. The commission and the proposal before the subcommittee today sets forth major policy decision to vest the management of this zone primarily with voluntary illusory state authorities. This is a step backwards and a step which will render ineffectual the tremendous factual compilation and recommendations that has been accomplished by the commission. Yet, on the other hand, it is obvious that the commission recognizes the danger of such a proposal. For example, it reaffirms the power of individual states to regulate fisheries and on the other hand recommends a special power for the federal government to intervene and assume certain regulation of endangered "interstate" circumstances where the same is needed and the state has failed to take action. There are those that have and will challenge the constitutional authority of the federal government to take the role proposed by the undersigned. The constitutional division of powers between the federal and state must be viewed in the light of the new developing jurisprudence. The relevant portions of the Constitution must be interpreted in light of today's needs, today's developments and the expansive nature of the commerce clause, the several provisions of the Constitution dealing with the national defense power, the federal property power and the Tenth Amendment. These provisions basically provide all of the necessary legal basis for the assertion of federal responsibility in the coastal zone.

The commerce clause has in the last century taken on a new face. It has served as the vehicle of interjecting federal power and the exercise of federal management in areas requiring the same. The estuarine and coastal zone is no exception. It should be noted and made absolutely clear that by interjecting this federal interface it need not preclude state action, however, the federal role must be predominant in the event the delegated responsibilities of the state government fail.

Obviously, the commerce and defense powers and other related federal powers provide the partial explanation of the federal involvement in navigational, shoreline, and other marine works of improvement. Significantly federal property power has been exercised. Admittedly much control over the Coastal Zone is comfortably encompassed in the powers constitutionally reserved to the state by the Tenth Amendment, however, as previously stated, the new jurisprudence recognizes the necessity of inter-relationship of governments. In fact, very relevant examples can be pointed to. The field of pollution control is cited; the field of water resource program is cited; regulation of population in the areas of fisheries; regulation in the areas of wildlife; regulation in the area of recreation. Admittedly, most of the programs that are referred to as examples are programs that vest primary control in state government, however, effectively provide the teeth to enforce federal standards and guidelines. This must be the aim and result of the proposed management system for the estuarine area.



## VI. A NEW CREATION

*A. A federal umbrella*

A new creation is proposed. This creation will be able to cope with the tremendous overlapping jurisdictional problems and will also be able to realistically materialize upon the State and Local experience and closeness to the various regions. The gravamen of the concept involves a Federal-State creation—"a duet". A program utilizing a simultaneous Federal-State marriage—a Federal-State partnership. Representation, participation and support from all levels of Government. The concept is good and should be truly utilized; it must, on the other hand, not be weak, participation must be mandatory, guidelines clear and rigid—flexible and effective.

The Federal umbrella must exist for effective coordination of the many Federal Agencies presently relating to the estuary, and the setting of national objectives and guidelines. Inter-State action and local participation, on the other hand, can not be usurped or diminished.

*B. Area*

The area in question shall constitute all of the estuarine and coastal zone of the country including the Great Lakes Areas. This mass will then be divided into regions or districts. For purposes of this presentation five regions are suggested: (1) Great Lakes Region; (2) North-Eastern Coastal Region; (3) South-Eastern Coastal Region; (4) Gulf Region and (5) Western Coastal Region. The Regions should be divided upon such factors as area, common problems and conditions and studies, reports and recommendations of the scientific and the technical world.

Within each region shall be sub-regions, basins or local areas. These to be divided with the same thory, purpose and intent; with the same reflection of the scientific, social technological and conservation needs of a society.

*C. Administration and control*

The administration and control of this program is suggested to follow the same regional pyramid effect. Participation must be mandatory, obligations and responsibilities defined and enforcement provision forceful. A weak structure will give birth to a weak program and plan—a weak result.

Each Region will organize in accordance with basic guidelines providing for representation from each State within the Region. The method of selection, the internal administration of the regional authority, creation of sub-regions, form and functions shall be State and Local controlled. State Authorities within the Region varying from strong central State-controlled authorities to bi-county or inter-municipal groups should result.

All Regions combined constitute the whole. The total program shall be directed and coordinated from the top. The new creation shall be a strong authority with representation for key factors. This Federal-State mechanism would not be a new branch of the existing Agencies, nor would it constitute a new agency. Its composition would consist of both major levels; i.e., State and Federal. The State interests would be represented by a representative selected by and from each of the five regional authorities, recognizing both economic and conservation interests. The Federal interests to be represented by a member of the various agencies or bureaus presently dealing with various aspects of the problem, such as the Departments of Interior, Commerce, Defense, Transportation and Health, Education and Welfare. Thus a strong factor of Federal Agency coordination will also arise.

This authority shall, from within its membership, choose its own officers, consultants and employees. It would implement the express statutory purposes and mission of the body. It would set and define the National objectives and policy guidelines. In addition to coordinating the Federal activities, it would coordinate the various regional master plans, resolve conflicting plans and regulations, and provide a continuing inventory of research and studies! A federal Interface! All to result in a well balanced overall environmental system. Its planning and regulatory and acquisition function will stimulate the ultimate realization of a national master plan of the estuarine and coastal zone managed through an effective structure.

In addition to the normal general powers of an authority, necessary to execute its mission, this body should have extensive redevelopment, renewal, condemnation and acquisition power. Obviously, the implementation of any national master plan would be questionable without this.



Extensive powers, respecting other areas, such as pollution, dredging, drainage, water resources, solid waste disposal, engineering and related standards are essential. Where overlapping and duplication with existing activities occur, coordination will be easily obtained.

Final and ultimate resolution of problem area and conflicts in policy, regional plans, activities and the like will be vested in this body.

#### *D. Financial*

The financial structure, as the percussion of the orchestra, shall provide the tempo and beat of the program. Without strength and power a meek composition can be anticipated. The proposed administrative structure lends itself to a combination and pooling of many powerful sources of funds. Federal funding, State and Local funding and Authority Bonding are available.

Independent and combined financial structures will be necessary. The regional regime must of necessity be financially independent and dependent also—financial independence by State and Local funding and its own bonding power respecting localized and regional projects and missions; financially dependent upon federal funding regarding matters general to aid regional plans and to excuse the overall master plan. Further, Federal funding, made available to the regional authorities will aid the cause of regional and public acceptance.

Sturdy and time-tested financial concepts regarding capital improvements of the past can be utilized, such as special assessments, bonding and the like. New and progressive concepts such as an inter-municipal, inter-State and/or Federal-State tax sharing pool, self-liquidating public projects such as beaches, marinas and other waterfront developments, and leasing of sovereign owned land may be utilized.

This federal umbrella can immediately and sensibly be interjected in and administered out of the Department of Interior and upon creation in the National Oceanic and Atmospheric Agency.

#### *E. Federal review*

An essential aspect of the overall program will be that of necessary federal review. As recognized by the Commission, continuing overlapping federal review will be a constant need.

"\* \* \* It is imperative that the national interest be protected. If for any reason a coastal zone authority cannot act in the public interest, the federal government should participate in the actions of the coastal zone authority. Regardless, the federal government should have power of review. The federal review role is critical. In our discussions with those in the area we found general agreement that the state should manage the coastal zone; they have the responsibility and have or at least should have the detail local knowledge necessary for sound management. However, there may be times when local pressures will tend to force the coastal zone authority to act in a manner not in the national interest. The mere threat of federal review will often suffice. If not, the federal government should be empowered to act in the public interest."

It is respectfully suggested that a program that is premised on voluntary participation of the states would not give the necessary degree of federal review or at least would not give the necessary degree of power to effectuate enforcement after federal review. Strong national objectives and standards must be set and a collateral power to enforce the same must exist with the strength to enable the interjection of the federal interface in the event the national objectives and standards are not complied with after a determination based upon federal review.

#### *F. Coastal zone laboratories*

Integrated and essential to the overall coastal zone and estuarine area program must be the Commission's recommendation that coastal zone laboratories be established in association with appropriate academic institutions to engage in the scientific investigation required in the estuarine and coastal areas. The report extensively and overwhelmingly justifies the need for a continuance and increase in the separateness of scientific research from the formal governmental structure, yet receiving full and complete federal financial support. The estuarine and coastal processes must be studied and continued in a scientific atmosphere; the results are essential to the advice of both the federal government and state structures managing this zone.

The National Oceanic & Atmospheric Agency, under the direction of the National Sea Grant Program, should have the prime responsibility to provide

institutional support for the coastal zone laboratories. The Sea Grant College and Program Act of 1966 must be amended to permit grants for the construction and maintenance of vessels and other facilities.

To integrate the coastal zone laboratory proposal into a governmental department, such as Department of Interior, as has been recently suggested, would be a true injustice to the effectiveness of a necessary program. To attempt to diminish the effectiveness of this independence of scientific research and to strip it from the academic atmosphere, is truly unjustified and would highly detrement the effectiveness of the overall program.

The governmental structure and the coastal zone laboratories recommended by the Commission can be effectively coordinated.

## VII. CONCLUSION

Thus, in conclusion, it is stressed that the type of progressive and essential program that is called for in order to obtain effective coastal zone management and balance planning of the estuarine system cannot be accomplished by voluntary participation of the states. The tremendous work product of the Commission and the years of studies and hearings relating to the estuarine demand a more effective administrative structure and more potent and powerful solution. The development of our jurisprudence and political concepts have truly laid the basis for an extremely progressive and pyramid type structure in which an overall federal umbrella would coordinate regional programs giving due regard and recognition to state and local functions and expertise.

Mr. CLINGAN. Thank you very much.

I would like to move now to the next panelist, a gentleman who was in Williamsburg, and who is most active in this area: Charles F. Schwan, Jr.

Mr. Schwan.

## STATEMENT OF CHARLES F. SCHWAN, JR., WASHINGTON, D.C.

Mr. SCHWAN. Thank you very much.

Even to list all the Federal and State agencies and programs relating to the coastal zone would take 10 minutes—all the time I am permitted to speak. To discuss them in such a brief period is out of the question. To speculate about future Federal and State roles I should need 10 hours.

Under the circumstances, I am going to assume that you—and I—are acquainted with the roles currently played, and devote most of my time to evaluating the coastal zone management proposals of the Commission on Marine Sciences, Engineering and Resources.

Before I do so, however, let me state what I believe to be the current status of coastal zone management. In brief, there is little or no such management, nor does this stem from non-feasance of any agency or agencies.

None is contemplated in Federal law except in bits and pieces as individual agencies may administer Federal lands in the coastal zone. No State has seen fit to designate an agency for overall coastal zone management. To the extent that management is practiced with respect to privately owned property, it is done locally.

It is true that certain aspects of management are practiced more widely. A number of Federal and State laws authorize planning to be undertaken—for water and related land resources, for outdoor recreation, for comprehensive State plans, to cite only a few examples.

To my knowledge, the closest thing to coastal zone management, except what is done locally, is accomplished by the Delaware River Basin Commission and by the zoning laws of a few States—Alaska,

Hawaii, Oregon and Wisconsin. The proposed Susquehanna and Potomac River Basin compacts would come close, closer than Delaware, to authorizing management as we speak of it here.

The Commission on Marine Science, Engineering and Resources on the other hand, proposed that the States establish coastal zone authorities "to coordinate plans and uses of coastal waters and adjacent lands and to regulate and develop areas."

The Commission and Congressman Lennon's draft bill would have coastal authorities exercise "necessary enforcement powers through zoning, permits, licenses, easements, acquisition or other means to assure compliance with plans and resolve conflicts in uses \* \* \*."

The Commission proposes, and Mr. Lennon's draft bills assume, creation of a National Oceanic Atmospheric Agency. It would include the Bureau of Commercial Fisheries, the Environmental Science Services Administration, the Coast Guard, the U.S. Lake Survey, certain programs now administered by other agencies and certain proposed new programs.

It would function as a coordinating as well as an operating agency. Both the Commission and Mr. Lennon in his longer draft bill would authorize NOAA to: (1) make grants to coastal authorities to defray up to 50 percent of operating expenses for an initial 2-year period; (2) make grants to such authorities to cover up to 50 percent of their long-range planning costs and implementation of such plans; and (3) guarantee bonds issued or loans obtained by coastal States for land acquisition, water development or restoration projects to implement coastal or estuarine area management plans. Such bonds would be taxable obligations.

Incidentally, interstate agencies could be designated as coastal authorities and Mr. Lennon's bill adds river basin commissions, presumably those set up under title II of the Water Resources Planning Act.

I believe it fair to examine these proposals to see if they are realistic, and, if found to be so, how desirable they may be.

To take NOAA first, I suspect that strong, persuasive arguments can be made for and against it. The birth of a new agency that would entail removal of extant agencies from several Departments would not be uncomplicated. Departmental and Congressional Committee jurisdiction is about as easy to forswear as alcohol or tobacco.

Nevertheless, if the political judgment were made that NOAA be established, I see no reason why it could not function effectively generally as envisaged.

About coastal authorities, I am much more dubious. One could expect opposition from State and interstate agencies whose operations would be "cut off at the pass," as it were. One could expect opposition from local governments to which land use control, no matter how well or ill performed, is a vital power.

Even assuming that such opposition could be overcome, and I don't believe it could be, I doubt the desirability of creating coastal authorities.

As I read the proposals, State conservation and recreation agencies, among others, and possibly State water pollution control agencies would be required to cede some or all of their powers to the coastal authorities within the geographic areas over which the latter would exercise jurisdiction.



In these, the most heavily populated areas of the country, the proposed coastal authorities would exercise a very strong influence on future economic development.

Such exercise, I believe, would not be well received by local governments. Should a coastal authority decree that a given area be reserved for a wildlife refuge, recreational area or whatever, but not utilized for industrial, port or residential development, no matter how logical in any broad scheme of things, who would compensate the local unit of government for the taxes forgone?

Purchase of easements or fee simple title would assist in part, but would have to be supplemented by payments in lieu of taxes to make the local units whole. If I were a city or county official, I should want to see the color of the Federal or State money before I acquiesced.

Before I conclude, I want to add that I see no reason why there should be in section 304(b)(1) any reference to taxability of State bonds. To begin with, a Federal guarantee for State bonds is worth almost nothing in interest costs. Beyond that, State and local governments can do without the continual nibbling away at the tax exemption of their obligations.

In conclusion, let me say I accept the diagnosis made by the Commission on Marine Science, Engineering and Resources and implicit in Congressman Lennon's bill concerning the ills of the coastal and estuarine zones.

I accept, too, the need for strong medicine, and that there should be Federal and State interest in and administration of the medicine prescribed. I believe that the measure of discretion presently accorded local units of government each functioning independently is not conducive to the fulfillment of regional or national objectives.

On the other hand, in its immediate area a great value should be placed on the views of a local government and its people. Somehow we must manage to devise an arrangement that will accord to local aspirations and decisions a considerable weight, but will give to States a power to oversee and, if need be, to revise. This might be accomplished by a review procedure at the State level at which, among others, interested Federal agencies might be heard.

Perhaps the way has already been pioneered by Wisconsin and, more recently, Oregon. These States require local zoning, but if there is a failure to perform or to perform adequately, the State may step in.

The Wisconsin statute, for example, requires that local zoning ordinances meet minimum standards, including "land division regulations to control building sites, placement of structures and land uses as well as sanitary regulations to prevent and control water pollution . . . [and] . . . administrative provisions insuring enforcement of the controls and regulations."

A similar requirement was enacted with respect to flood plain zoning.

In the alternative, control might be lodged directly in the State, as Massachusetts has done. Quite possibly, some States might wish to create coastal agencies to function in a coordinating capacity. Which of these or possibly other routes should be followed is a decision to be made at the State level, it would seem to me.

To resolve this dilemma, if the Committee on Merchant Marine and Fisheries contemplates legislation, I should favor the brief amend-

ment proposed by Congressman Lennon. Following a precedent established by the committee when the Federal Boating Act of 1958 was drafted, I should invite States, and in this case local governments, to name representatives to the study and drafting committee.

An advisory group of persons representative of the private sector could be named. By drawing together all the interested parties, I believe that a more satisfactory solution could be devised than would be possible otherwise, or to this point has been proposed.

Thank you very much.

Mr. CLINGAN. Thank you.

This brings us to our next panelist, from Washington, D.C., Mr. Edwin T. Haeefe.

#### STATEMENT OF EDWIN T. HAEFELE, RESOURCES FOR THE FUTURE, WASHINGTON, D.C.

Mr. HAEFELE. First, let me say I had nothing to do with any input RFF made to this council's deliberations or to the commission's.

The last speaker of the day has two obligations. The first is that he must have been here all day so that he is as tired of being talked to as you are. I have been and I am.

The second obligation is that he must be brief. I will be.

I was disturbed a little bit by the report of the commission and by much of the conversation that has taken place here today.

In dealing with this problem strictly as a "management" problem—recognizing that you are mostly management people—officials of State governments or of Federal executive agencies—I hope you realize that "management" tends to focus attention on the means rather than the goals.

I think you all see that what we have here is primarily a choice problem. Even though we may use, as was mentioned this morning, compromise in reaching the choice, when we come down to it, we do make choices.

Looked at as a public choice problem, there were some words and phrases and understandings today that I think need to be more clearly defined. I would like to give you some definitions.

I apologize for my exaggerations, but the day has been long and time is short.

Definition A, a public authority, particularly as in a coastal zone authority:

"A device for keeping public choices out of the hands of the electorate and their elected officials of government, often with the active cooperation of the latter."

Definition B, a public hearing held by a public authority.

"A process for allowing the electorate to let off steam after you have removed the control of public choice from their hands."

Definition C, balanced use of the coastal zone:

"Like a balanced transport system, this does not mean anything in particular, and a good deal less as a general proposition."

Synonym: See comprehensive planning.

Definition D, grant-in-aid program:

"An obsolete Federal device which effectively keeps choices at the Federal level without even trying."

I do want to make one serious definition because it doesn't appear in the commission's report. That relates to the criterion of maximizing net social return.

This is an aggregate measure of present value of benefits minus costs.

It does not measure the incidence of the benefits or the incidence of the cost. Since the incidence rarely if ever falls on the same parties, then the different parties will choose different things.

I think in light of the time, I would prefer to stop at that point.

Thank you.

Mr. CLINGAN. Well, we seem to have a lot of meat out for discussion. I appreciate your comments Mr. Haefele, on the public hearing process.

Mr. ROBERT KRUEGER. I have a question for Mr. Porro. He stated that when he began perhaps we would want to call him some other names when he finished. I think that perhaps a wouldn't choose to call his anything else, but I might choose to call his comments in part superficial.

In California, I believe we have shown that the premise of a prospective grant-in-aid in favor of coastal development has been effective.

We did create a new department to take advantage of a law that has not yet been enacted. Perhaps the other States might also show this same willingness once a law is enacted.

Secondly, the interest of the State in the coastal zone cannot be ignored. Note in particular they own the coastal zone under the Submerged Lands Act.

Their title was a very gravely considered point from a national policy standpoint, and to interject the complete political revision in the system would raise issues that would make this audience and most State audiences much less receptive to a program of the type that your committee is considering.

Thank you.

Mr. PORRO. I would like to say that I am very glad that I idolized some of the States, because California, if you will recognize, was the first State I referred to. I would like to say publicly that I have read the California reports and I am well aware of what is happening in California.

You are to be complimented.

Unfortunately, that is not a complete pattern throughout the rest of the States.

Let me take your word "superficial." Yes; it was superficial in presentation here today.

I have submitted a detailed statement which is not quite as superficial and does go into this in much more detail.

With regard to ignoring the State, when you read the proposal you will see that the State participation is much stronger than it is right now.

I would like to make it absolutely clear to anyone who is under any misconceptions, you are living with this same kind of concept right now with many acts that are in existence, such as the Clean Water Pollution Control Act and such as the Water Resources Act.

This is all that is being proposed. But sometimes, to get across a



point, you have to go perhaps a little bit further to demonstrate your point.

Mr. ROBERT KRUEGER. With your explanation, if there is, in fact, strong State participation in this entity that you propose, about which we know nothing other than your general comments, if there is to be State participation, genuine State direction, a recognition of the State interests, isn't this perhaps what was proposed by the Commission and on which a number of speakers have indicated their views about?

In short, to quote your own deathless prose, you suggested—I am being facetious—you suggested perhaps a mix of new clichés, urging that we forget the old ones, that we would set up an umbrella to correct the maze.

Perhaps we have in NOAA the umbrella about which you are speaking.

Mr. PORRO. Let me make this clear. I did act as one of the consultants to the Commission and am overjoyed, absolutely overjoyed, with their proposals.

I am dissatisfied and dissent as to one particular point, and that is voluntary participation. As California may and has voluntarily taken the steps, that is not the pattern throughout the United States.

I readily admit to the use of words and terminology, perhaps, to make a point that perhaps better words should be chosen for.

I do not think, however, that you understand, or perhaps it is my fault for not getting an important point across. But I completely agree with the presentation.

What I am calling for is a genuine participation, partnership and joint effort.

Mr. KRUEGER. I have just a brief reply. I think there is a basic point involved here. You do have a very difficult clinical situation with which to deal even within the States.

You speak of a maze. You have a State maze. You have, in many cases, grants of tidal submerged lands being made by the States to local municipalities. New York, for example, has the authority in the Authority of the Port of New York a mass of submerged lands.

In California, we have done this repeatedly up and down the coast. So you have a very complex political set of problems within the States.

If you interject the Federal element in dealing with these problems, which are going to be difficult in themselves in setting up a Coastal Zone Authority, then perhaps the whole thing becomes unrealistic.

I would think that you would start with the grant-in-aid programs, and if there are States, such as California, that are willing to go forward with them, that you end it there.

If there are other States that will not cooperate, that will not form the interstate arrangements which are necessary to meet the purposes of the act, then perhaps go further. But you should first give the States a chance to succeed.

Thank you.

Mr. CLINGAN. If you gentlemen will take your gloves off for a minute, we will recognize another speaker from the floor.

Mr. KING. I am not going to let you off quite so easily, Mr. Porro, because you did not mention North Carolina.

Mr. PORRO. Missed again.

Mr. KING. I do believe that you mentioned California, Massachusetts, and Rhode Island.

Mr. PORRO. And even that backfired.

Mr. KING. I think Dr. Linton this morning laid out North Carolina's policy and the processes by which they are endeavoring to pass legislation in the State legislature for the Coastal Zone Authority of the State of North Carolina.

You say that voluntary grants or voluntary legislation by the Federal Government is not good or would not work, I believe was your wording. You did pass lightly over the Federal Water Pollution Control Act which I am sure you are well aware of has grants to induce the States to act in water pollution matters.

It also has enforcement procedures. I might go along with you this far, that if this legislation being proposed was to include some type of enforcement for those States that don't want to act, that would be one thing. However, from the turnout here today, I think that the majority of States certainly, and more so with the national exposure of our water problems, are acting on their own.

So I would not want to upstage this enforcement. I think we should minimize it.

However, I would like to see it stated in there.

Also, you mentioned that the Federal agencies could better control or better aid the local-State problems in the water area. I think if we just take problems like coastal zone land ownership of wet lands, marsh lands, submerged lands, and what not, zoning and all these other problems, certainly the manpower of the Federal Establishment would have to be doubled to handle what the States are able to do on their own.

Thank you.

Mr. PORRO. I would like to say, Tom, that that is exactly what the details of the proposal set forth. They are analogous to the type of structure that is set up in the Water Resources Act, analogous to the type of enforcement provisions in the Clean Water Act, which, basically, give the State the option to go ahead, and if they do not follow certain guidelines gives the Federal Government or the Federal structure the teeth.

What I am saying is that there are no real teeth in a proposal that just says "Do you want to participate?" That would exclude States like California. That would exclude States like North Carolina.

Without any question, that is the type of proposal that I was speaking to.

Mr. KING. I didn't get a chance to read your full paper here. I just glanced over it. But I can say as someone introduced me in Miami as being in ocean law, the reason for that is that all my grades were below "C level."

Mr. CLINGAN. Very good.

Mr. PANKOWSKI. In going through the material that was prepared by the Commission, I have to admit that I was a bit confused when we talk about the coastal zones whether we mean the land, the water, or both all mixed up together.

I would like to know whether the zoning requirements which the States would have to set up would merely be extensions of the zoning which now takes place on land.

The reason I ask this question is I think the common man in the street recognizes that in most areas of this country we have brutalized the land something terrible.

In going through this report, the distinct impression is given that what is left of a most precious resource is going to be brutalized in like manner. If this question could be answered, I think you could at least point the direction.

Mr. CLINGAN. Mr. Schwan?

Mr. SCHWAN. I don't know that I can answer a question as to what the Commission would propose. I don't think there is anything wrong with the concept of zoning. Its application may be greatly desired. But what would you substitute as a concept?

Mr. PANKOWSKI. I believe you can start, Mr. Chairman, by recognizing the water resources for what they are, literally irreplaceable.

When we talk about a report which seems to have accommodated the interests of developments such as housing which can be located elsewhere and for which alternatives are available, then I in particular am not only disturbed but apprehensive about the system of management that we are going to set up which treats all resources and all uses as if they were equally valid, regardless of their nature, regardless of their availability.

Mr. CLINGAN. Mr. Porro?

Mr. PORRO. I think I have said enough.

Mr. SCHWAN. Let me add one more word. I don't know that the Commission has suggested that all uses were equal; on the other hand, there are uses—a gentleman a moment ago spoke for ports. Ports have to be located on bodies of water. There are water-related uses which have to be accommodated and which in the process may do some harm to the ecosystems about which words have been spoken.

I think any good management system would locate to the extent possible housing or other uses which can be accommodated elsewhere, would locate elsewhere, would do whatever possible to preserve the ecosystems, to enhance them.

On the other hand, I think we have to recognize that there are certain uses which are so closely related to the water, so dependent in being on the water that we simply have to accommodate them also.

I should guess that most people in attendance here are—to use an old cliché—conservation oriented. More power to them.

We have raped the land, the water and the natural resources. There is not much question about it. But I don't think we can accommodate the population explosion, the affluence to which all of us are accustomed, unless we recognize that some of these uses which may not be in accord with the ecosystems are going to be employed in the coastal zone.

Mr. CLINGAN. We have time for one more question.

Mr. WILLIAM STOLL. I would like to address my words of wisdom to both Mr. Porro and Mr. Schwan.

In Texas, the Governor has created an interagency national resources council. One of the first tasks of this council has been to initiate a coastal planning program for our States.

One very important reason for this was that the State of Texas owns 4½ million acres of submerged tidelands, beaches and islands.

The Governor, prior to this action, would usually designate a par-



ticular State agency as State contact, for instance, for the estuarian activities of the Department of Interior.

The Governor has since designated the council as the State contact for the estuarian programs of the Department of the Interior. We have requested that Secretary Hickel do likewise within his office so that the State of Texas can work with one body within the Department of the Interior. This is the approach that we are using in our State.

Very importantly, the last session of the Texas Legislature passed five very significant coastal bills. The first one declared our own moratorium on the sale or lease of the surfaces of our beaches, islands and submerged tidelands, a 4-year freeze on these three.

The next piece of legislation set up a system of State bloc grants to coastal counties for the maintenance of public beaches.

The next bill created legislation to permit the establishment of beach park boards by counties along our coast.

The fourth bill stipulated criminal penalties for the denial of access to public beaches.

Our fifth bill now requires State permits for all coastal mineral and earth excavations.

The Texas Legislature appropriated to the Governor's office money for the program coordination of our State coastal program.

What we propose is to mesh together the estuarian activities of eight State agencies into one united approach.

Frankly, gentlemen, we think we could have both economic development with conservation. Fortunately, in Texas, much of our coastline is still virgin.

This is the direction we are heading into and this is why we are now coming to the Federal Government to say, "Look, this is what we are doing. How will you react to this?"

The Governor has decided that our State should take a lead in this. We want to very much cooperate with our sister States and also cooperate in fostering a State-Federal partnership to utilize the resources of the oceans.

Mr. CLINGAN. Thank you very much.

I thank you all.

We remind you that there is a reception at 5 o'clock. If you haven't picked up the invitations, you can do so at the desk.

We will recess, to reconvene at 10 o'clock tomorrow morning.

(Whereupon, at 4:30 p.m. the subcommittee recessed, to reconvene at 10 a.m., Wednesday, October 29, 1969.)

# COASTAL ZONE MANAGEMENT CONFERENCE

WEDNESDAY, OCTOBER 29, 1969

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON OCEANOGRAPHY OF  
THE COMMITTEE ON MERCHANT MARINE AND FISHERIES,  
*Washington, D.C.*

The subcommittee met at 10:10 a.m., pursuant to call, in the caucus room, Cannon House Office Building, Thomas A. Clingan, Jr., counsel, presiding.

## PANEL 5—THE FEDERAL LOCUS OF COASTAL ZONE MANAGEMENT

### MODERATOR

Dr. Lewis M. Alexander, executive director, Law of the Sea Institute, University of Rhode Island.

### PANELISTS

John H. Clotworthy, president, Oceans General, Inc., representing the National Oceanography Association; William J. Duddleson, director of policy studies, the conservation foundation; Col. Leonard J. Goodsell, executive director, Great Lakes Commission.

DR. ALEXANDER. Good morning, and welcome to the second day's session of this conference. Yesterday afternoon we got talking about the need for some sort of Federal agency or organization with regard to the coastal zone.

I think this was pointed up rather clearly by the exchange between Lawyer Krueger and Lawyer Porro.

We are going to, this morning, ask the question of where might this agency be located within the Federal Government. As you are aware, the Commission report really has two trusts to it. One has to do with the efforts the United States should establish for marine activities and the other is an organizational problem of where the marine agencies themselves should be located.

A part of this problem is what we will be addressing this morning. I have only one comment to make. If you do have a statement for the record which is more than a page or so in length, will you summarize it and the report itself may be given to the reporter. The statement will go into the record that way.

Today we have three panelists. The first on my left who will lead off is John Clotworthy. Mr. Clotworthy has an electrical engineering degree from the University of Virginia and also an advanced degree from the Harvard Business School. He was with Westinghouse for 19

years, spent a year and a half as chairman of the Division of Ocean Engineering at the University of Miami and is now the president of the Oceans General, Inc. He is also the past president of the National Oceanographic Association and what he will be saying today represents, as I understand, the general policy of NOA.

**STATEMENT OF JOHN H. CLOTWORTHY, CHAIRMAN, GOVERNMENT REORGANIZATION COMMITTEE, NATIONAL OCEANOGRAPHY ASSOCIATION**

Mr. CLOTWORTHY. Thank you, Mr. Chairman. The question before this panel is an interesting one, a complicated one, a contentious one. I want to purposely oversimplify in this introductory statement.

In approaching the question of where in the Federal Government apparatus to locate responsibility for a new approach of coastal management, I have applied one basic yardstick.

What will work best, in the overall national interest?

By overall national interest, I mean to deliberately introduce elements beyond those directly bearing on coastal zone management problems, vital as they are. Let's think a moment about what the national interest is in the coastal zones—because when we do, we will see how no one existing Federal agency or department fills the need.

Among the uses which the Nation has of coastal areas are: Housing, heavy industry, ports, power generation, recreation, fishing, aquaculture, petroleum and mineral extraction and, of course, defense.

The Stratton Commission on Marine Science, Engineering, and Resources stated the national need well:

The coast of the United States is, in many respects, the Nation's most valuable geographic feature \* \* \*. The uses of valuable coastal areas generate issues of intense State and local interest, but the effectiveness with which the resources of the coastal zone are used and protected often is a matter of national importance \* \* \*. The key to more effective use of our coastland is the introduction of a management system, permitting conscious and informed choices among development alternatives, providing for proper planning, encouraging recognition of the long-term importance of maintaining the quality of this productive region in order to ensure both its enjoyment and the sound utilization of its resources.

This is from page 49 of the report.

We must consider how the national interest will be affected by our decision on the question discussed here.

In applying this simple yardstick of what will work best, in the national interest, I have relegated to secondary consideration such matters as historical agency or department jurisdictions. The fact that many Federal agencies have a present role in coastal matters is not sufficient to justify their assumption of an innovative coastal management program.

One of the jobs, in fact, will be to straighten out the existing tangle of sometimes competing Federal activities. The clash between navigational needs and estuarine preservation is a classic example of competing interests.

The type of program I refer to is the one set forth by the Stratton Commission on Marine Science, Engineering, and Resources recommending Federal grants to the States to encourage establishment of



coastal zone authorities to plan the orderly development of coastal resources.

On the question of what will work best—from, principally, the standpoint of the States which will have the primary responsibility in managing the multiple uses of their coasts, clearly a central location is essential.

Otherwise, a State will be faced with the bewildering array of 24 departments and agencies with specific activities that affect coastal development, and from the report of panel III, chapter 7, table 1, we have a list of Federal agencies with activities relating to the coastal zone attached.

It will be essential for one office to handle Federal grants-in-aid to State coastal authorities, other assistance and review plans and actions.

For the States to have to coordinate proposals and programs through the Fish and Wildlife Service, Department of Health, Education, and Welfare, Corps of Engineers, National Science Foundation and ESSA—to mention just a few—is just downright unthinkable.

If central location for the Federal role in coastal zone management is conceded, and I frankly cannot think of any objection, then the harder question is, where? In what department or agency?

Here, I think it is worth pointing out what is unique about coastal zones. Simply put, it is that they adjoin large bodies of water, either the oceans or the Great Lakes. Coastal zones, the oceans, and the Great Lakes are closely interrelated. What we are talking about is something more than just another landuse plan. We necessarily are talking about the impact of various land uses on another environment—the water—and how to favorably balance all of the pressures on this rich coastal zone made attractive by the proximity to water.

The U.S. Army Corps of Engineers has a rightful claim with navigation, beach, and hurricane programs affecting coastal development.

The Water Resources Council, an interdepartmental agency, can—and I am sure will—argue that its river basin commissions can form the basis for coastal studies and management decisions.

The Department of the Interior can—and will, I am sure—argue it is the logical place for coastal zone management since many of its components—Bureau of Commercial Fisheries, Sport Fisheries and Wildlife, Water Pollution Control Administration, Office of Saline Water, and Bureau of Outdoor Recreation, to mention some—have coastal activities.

However, from the standpoint of the total national interest, I believe coastal zone management ought to be housed in the proposed National Oceanic and Atmospheric Agency.

For a variety of reasons, well stated by the Commission on Marine Science, Engineering, and Resources, the Nation needs a stronger effort to understand and beneficially use ocean resources, especially its coasts. NOAA is recommended as the catalyst for an expanded effort by industry, Government and science and, in my opinion, is absolutely essential to increased understanding and support for ocean programs of all kinds.

I not only strongly support NOAA's establishment, I think it will

take place. The reason, I think, it will take place is that Congress wants it—and the Nation needs it.

Housing coastal zone management in NOAA will clearly satisfy the need to have this function in one place.

The national interest will be best served by a strong, viable independent agency with a focus entirely on the oceans and coastal zones.

It is the lack of a single focus on the oceans and coasts by an agency of the Government such as the Interior Department that is most compelling to me.

The Department of the Interior is basically land oriented. It has statutory responsibility for such functions as: (1) custody of 750 million acres of land, (2) development of mineral resources, (3) mine safety, (4) recreation, (5) Job Corps Conservation Centers, (6) irrigation, (7) the Nation's Indian reservations, and (8) the U.S. trust territories. The Department also has clear responsibility for certain major water matters—pollution, fisheries, hydroelectric power systems—but by no stretch of the imagination, or departmental public relations, is the Interior Department now an oceanography department.

It is not accidental that the Department of the Interior's symbol has been a buffalo. The Bureau of Indian Affairs commands an appropriation this budget year of \$261.7 million, up \$31 million from last year, while the Bureau of Commercial Fisheries is given \$42.3 million, up \$1 million, for its operations this year, this in a time when U.S. fisheries are going downhill at a very rapid rate.

Coastal zone management housed in the Department of the Interior would, in my opinion, suffer from the same relative lack of focus, budget and priority as has the Bureau of Commercial Fisheries.

Just as the Bureau of Commercial Fisheries will prosper by transfer to an agency with a clear focus and responsibility for ocean waters, so will coastal zone management profit from inclusion in an agency where it does not have to compete with the Bureau of Indian Affairs, Job Corps Conservation Centers, interior parks and all sorts of non-ocean-related matters.

Furthermore, the program envisioned calls for the States to set up independent authorities to bring together the various State activities bearing on the coasts. We should do no less for the Federal structure.

Dr. ALEXANDER. Thank you, John. Our next speaker is Mr. William J. Duddleson. He is Director of Policy Studies for the Conservation Foundation. He is a graduate of the University of California, who first became involved in coastal zone conflicts from the viewpoint of assistant to a Congressman representing the north coast of California. As the first Chief of State Planning for the U.S. Bureau of Outdoor Recreation, he helped develop the State planning and grant-in-aid aspects of the land and water conservation fund program, on outdoor recreation program.

In the Federal Government he has also served as Chief of Studies for the President's Council on Recreation and Natural Beauty, a Cabinet level group which President Nixon renamed this year the Environmental Quality Council.

## STATEMENT OF WILLIAM J. DUDDLESON, DIRECTOR OF POLICY STUDIES, THE CONSERVATION FOUNDATION

Mr. DUDDLESON. Thank you, Mr. Chairman. Ladies and gentleman, I might just tell you something about the Conservation Foundation very briefly, although my remarks today are not formal expressions of foundation policy. We could, I suppose, be called the Conservation and Development Foundation. Of the organizations I know of who have the word "conservation" in their names or foremost in their programs, I expect we are the most involved in the development process.

We are now, for example, running a series of demonstration projects along ocean coastlines by which we are attempting to demonstrate the usefulness, or lack of usefulness, of integrating the ecological approach, ecological knowledge into the urban development process. For example, the first project in the series is at a place called Rookery Bay on the gulf coast of Florida. There we put together a team that has come up with criteria and an overall development plan for developing the shortline of this bay for residential and associated commercial use.

The plan is designed to permit the bay itself, which has some rather high natural values, to continue performing its natural functions. Instead of the venetian type development of the bay, which is common in Florida, requiring dredge and fill, for example, the plan calls for canalizing into the mainland, creating additional waterfront that way, and at the same time enlarging the water surface of the bay.

The plan also calls for control of fresh water runoff associated with urbanization, so that the salinity level remains within the limits that will support the fish and shellfish nurtured in the bay.

Turning now to our panel's assignment, it is, "for the sake of argument," to "assume that there will be some sort of strong Federal role" in coastal zone management, and to "inquire where the authority ought to reside in the Federal structure for most effective management."

To get directly to the point, I am skeptical that NOAA is an appropriate residence in the Federal structure, or the most appropriate residence in the Federal structure, for a coastal zone plan and management program. My skepticism is based upon at least two questions.

First, I question whether an oceanographic agency, an agency whose main thrust is deep-water ocean technology development, is the most appropriate base for coping with the most critical and most urgent coastal zone problems. I see most of these as essentially conservation problems. We have already heard a number of descriptions here of the most critical problems. They include pollution, shoreline alteration, especially dredging and filling; the conflicting pressures for land use, for residential use, for parks, ports, and powerplants.

Are not these kinds of problems, and their solutions, tied more directly to the land than to the sea?

When one looks at the Great Lakes shoreline, the thread between deep water oceanographic research and development and the solution of shoreline problems becomes even thinner. In testimony before this committee, the House Merchant Marine and Fisheries Committee, earlier this year, John Calhoun of Texas A. & M., chairman of the Oceanography Subcommittee of the National Academy of Sciences and



a participant in this conference, speaking from a scientist's point of view, expressed this question better than I can.

Dr. Calhoun said—

On the coastal zone question (as distinguished from the oceanography question), it is necessary to ask whether the coastal zone problems are really oceanographic in nature. Some of the important agencies that deal with coastal zone problems do not appear to have been considered in the Commission's recommendations, for example, the Corps of Engineers of the Department of Defense which plays a very large role in coastal zone activities.

The specific mission for a new organization as seen by the Commission therefore appears to have a dichotomy—to be oriented on the one hand toward a single geophysical system representing the ocean and the atmospheres together, but on the other hand to be oriented also to the problems of people living along the coast. A new Federal organization might be focused on one or the other of these. Can it be focused on both?

I might simply emphasize that from my point of view most of the conflicts in the coastal zone do appear to be essentially people-pressure problems. People don't live in the water.

Rather, they live on the land and relate to the coastal zone from the land. Most of the pollution of the coastal zone comes by land, through the rivers, and not by sea. Most of the pressures for outdoor recreation use of the coast, the pressures for residential use, and the pressures for more highways and airports along the coastal corridors—all these appear to have less to do with oceanic systems than they do with terrestrial systems, including man's patterns of urban concentration on the land.

In fact, land use conflict and our presently wasteful and inefficient ways of resolving it, and shoreline alterations, particularly dredging and the consequent destruction of estuaries and other valuable natural resources, probably are the most critical coastal zone problems. These come by land and not by sea.

As a second general question, I can't help but be skeptical, generally, of proposals to add yet another limited purpose Federal grant program to the rather marvelous and wonderful and awesome proliferation that we already have. I ask first whether already existing Federal agencies administering already-operating programs, or alterations in these existing agencies or combinations of existing agencies, can do the job that needs to be done.

Only after the answer is "no" to existing agencies, "no" to modification of existing agencies, and "no" to combinations, should we turn to establishment of the new agency for the coastal zone as our best answer. I am not yet prepared to do this.

In any event, regardless of the domicile that is decided upon, in view of the proliferation of Federal grant programs and the resultant fragmentation, inefficiencies and confusion, I suggest that an approach similar to the model cities approach be considered. The idea, of course, of the model cities approach is to encourage coordination of existing Federal programs at the receiving end, in the field. This is done by providing additional carrots to the recipients of the grants, in the form of a higher Federal cost share, to those who combine the existing Federal programs in focused, coordinated ways.

The idea is to make existing programs work, rather than to place another layer on top. The successes and the failures of the Department of Housing and Urban Development, to date, with the model cities

delivery system may be useful to those who are developing a coastal zone grant program.

It might also be useful to throw out some thoughts on what a Federal coastal zone agency should be, what its characteristics should be, regardless of where it is located.

In breadth of interest, it should not be just, or primarily, a natural resource preservation agency, or just or primarily a resource development or exploitation agency, but rather it should combine development and preservation responsibilities.

Second, while it should have research and planning functions, probably it should be a line or operating agency rather than primarily a research or planning agency.

And third, it should have, or have the capability of developing, working relationships with the States, preferably with the Governors and the key State agencies which many of you gentlemen represent.

These first two criteria may suggest to some the Interior Department.

In addition, I expect it would be very useful for the Federal residence for this program to have some sort of an interagency mechanism, a meeting place for all the Federal agencies already involved and probably will continue to be involved in the coastal zone.

This last point suggests that there are at least two interdepartmental units in the Federal Government that should be looked at. One is the Marine Resources Council itself. And the other, of course, is the Water Resources Council, which we heard about yesterday and which probably more than any other Federal unit or agency already has, through its title III grant program, the basic authorities that the coastal zone management act envisages.

The Water Resources Council does not have the authority to make grants to the States for implementing plans. But it does have authority and indeed is making grants to the States for planning for water and related land resources including the coastal zone.

And then, of course, although I am reluctant to use the term "comprehensive planning" after our last speaker for R.F.F. yesterday with his definitions, there is already a Federal program of assistance to the States for comprehensive planning. HUD's "section 701" planning grants provide two-thirds Federal money which the bulk of the States are using, virtually all, as a matter of fact including California for its marine and coastal zone plan as we heard yesterday.

I will stop here, Mr. Chairman, to leave time for discussion. There hasn't been nearly enough yet on this question. Thank you.

Dr. ALEXANDER. Thank you. You may have unwittingly started a new cliché. When you say, "No" to these departments often enough, it becomes NOAA.

Our third speaker is Col. Leonard Goodsell, who spent 30 years in the Army Corps of Engineers and since 1965 has been executive director of the Great Lakes Commission. He has a B.S. in engineering from West Virginia University and a M.S. from the University of Iowa and represents the Great Lakes compact of eight States with their commission offices on the campus of the University of Michigan at Ann Arbor, Mich.

## STATEMENT OF LEONARD J. GOODSSELL, EXECUTIVE DIRECTOR, GREAT LAKES COMMISSION

Colonel GOODSSELL. Mr. Chairman and ladies and gentleman, the Great Lakes Commission is pleased to have the opportunity to present views on matters under consideration by the Congressional Conference on Coastal Zone Management.

The Great Lakes Commission has served for 14 years as the advisory and recommendatory agency for the Great Lakes States on regional water resources matters. Our interests encompass all water uses and manipulations, fisheries and wildlife, navigation, and commerce, hydro and thermal power generation and utilization, domestic and industrial water uses, shoreline use and recreational facilities, water quality, water quantities including this parameter measured in water levels of the Great Lakes, economic development, and, I suppose, one broad interest could be described as regional ecology.

In the Great Lakes we have 20 to 25 percent of the world's reservoir of fresh water on the surface, and the U.S. Geological Survey informs there's much more than that underground. It must be protected, it must be wisely developed and it must be conserved. Our broad objectives, no matter from what region we come, are: (1) to have a place to live, (2) to have a place to work, and (3) to have a place to play.

Going back to yesterday's discussion as the man from Louisiana said, these are our objectives in the Great Lakes and the Nation. The technology leading to objectives for meeting the requirements in the Great Lakes varies somewhat because of the huge water impoundments and the resultant inertia of the system, which was another word used yesterday. We certainly do have a good system in the Great Lakes as compared to, say, the interactions within a swiftly flowing stream or the vagaries of the world's oceans.

### REPORT "OUR NATION AND THE SEA—A PLAN FOR NATIONAL ACTION"

The Commission on Marine Science, Engineering, and Resources, no doubt, already has been complimented on its report. To approach a subject of this scope and magnitude, and to report in a single volume in about 300 pages requires the greatest zeal and temerity, and I must add my praise for an monumental effort.

The report lumps together millions of square miles of sovereign marine environment areas, the contiguous zone, the high seas, "internal waters," rivers, lakes and canals, and the Great Lakes.

My remarks are based generally on the conditions we see in the Great Lakes and we also have international considerations in the Great Lakes that some of the States don't enjoy.

The Great Lakes: To put the Great Lakes in perspective—The Great Lakes basin has a total area of almost 300,000 square miles of land and water area, with approximately 100,000 square miles of water surface area and 200,000 square miles of land surface area.

Lake Erie has a maximum depth of 210 feet, an average depth of 58 feet. Lake Superior has a maximum depth of 1,333 feet, average depth of 487 feet. Within the context of Marine Technology one of the subjects treated in the report, our operations on the Great Lakes would fall under the first goal, "The development of the necessary



technology to make possible productive work for sustained periods at depths to 2,000 feet."

The bottom of Lake Superior, offshore, has been described as a pretty barren piece of real estate. You can study it and look at it and that is Lake Superior offshore. Lake Erie's bottom conditions have been described by so many, in so many ways that one cannot readily provide a succinct description.

From a national point of view, however, midcontinent North America readily recognizes the possibilities contained within the second goal of marine technology, which takes us down to 20,000 feet.

Our boundaries in the Great Lakes between States and those that we commonly share with Canada are precisely defined, described, and marked, except in two instances in southern Lake Michigan. The States constitutionally retain all powers in water resources management (except those in the commerce clause of the Constitution dealing with navigation). The States also own the submerged lands under the Great Lakes as well as the surface waters within their State boundaries. The States are presently exercising their jurisdiction over these lands and waters and I imagine one of our speakers yesterday, Mr. Porro, really didn't have the Great Lakes in mind when he spoke of the coastal zones, or else he would have included some of the Great Lakes States in water management.

I think too, a lot of people are not familiar with the jurisdictional requirements and the application within the Great Lakes jurisdiction.

Many of the Commission's recommendations, or reasonable fac-similes thereof, have been implemented and are in effect in the Great Lakes areas, such as:

(a) Wisconsin's Shorelands Protection Ordinance. I think Charlie Swann mentioned Wisconsin's Shoreline Protection Law which is possibly one of the best pieces of legislation as to zoning and sanitary requirements and so forth. I hope that thing is implemented and kept on the books.

(b) Water Quality Standards, all States, under provisions of the Water Quality Act of 1965.

(c) Michigan's Submerged Lands Act, some of which is one of the best we have been able to find in the United States. We like to look at Michigan too, as being one of the best, even though other States may have good ones too.

(d) Statutes and regulations, all States, pertaining to protection of submerged lands.

(e) The International Joint Commission, established under the Boundary Waters Treaty of 1909.

(f) The Great Lakes Fishery Commission, established by the United States and Canada. This is an international treaty between the United States and Canada and looks after the Great Lakes fishery.

(g) The Great Lakes Commission, established by the eight Great Lakes States.

(h) The Great Lakes Basin Commission, established under Public Law 89-90.

(i) New York, Pennsylvania, Ohio, and Michigan's oil and gas drilling statutes and regulations.

(j) Illinois' comprehensive water plan.

(k) And so forth.

These are just a few of the things which have been developed there and they all apply to the Great Lakes, as you might call it, coastal zone.

For the purpose of collecting taxes the Internal Revenue Service fully recognizes the Great Lakes region, as do many of the Federal departments and agencies within their spheres of interest.

The Interstate Commerce Commission does not recognize the Great Lakes as a port range, because the Merchant Marine Act of 1936 does not specifically mention the Great Lakes. This needs correction. It leads to discriminating practices contrary to Great Lakes interests in our commerce.

The Government of the United States recognizes the Great Lakes area by imposing tolls on the St. Lawrence Seaway, our vital shipping lifeline, the only waterway on the North American Continent on which tolls are exacted. More is to come here.

In essence I should like to point out that the Great Lakes region is rather precisely delineated three dimensionally; the States and the two provinces of Canada are discharging their water resources management responsibilities, and they are ably assisted by the International Joint Commission, the (international) Great Lakes Fishery Commission, and by the several Federal departments and agencies with water resources functional responsibilities within the region.

There are a multitude of studies on the Great Lakes, some completed, some underway, and many, many more contemplated. Recently a "final draft" of a report prepared by a consulting organization for, as I understand it, the Great Lakes Panel of the National Council on Marine Resources and Engineering Development entitled "The Role of Marine Science in the Multiple Uses of the Coastal Zone of Lake Erie and Lake Superior," dated June 1969, was received for review. Just how it fits in with the overall Commission's report "Our Nation and the Sea," I don't know, but we commented on it and they gave us 3 days to read it. We pointed out that there is a strong State position in the Great Lakes and the need for this panel to understand the Federal legislation, to consult with State personnel, and to become familiar with State efforts, statutes, regulations, and operating procedures; the futility of further layering of departments, agencies, and councils in an attempt to solve our problems with the resulting further fragmentation of the U.S. water management effort; the desirability of fresh or innovative thinking on water management and planning, and more mundanely, the opportunities for water management progress with reasonable Federal funding support and a stabilized program or plan.

Recommendations included: (1) that the Council earnestly consider the feasibility and desirability of a Federal-interstate water management compact, similar to the draft compact furnished the Great Lakes Panel by the Great Lakes Commission in October 1968, and (2) that the Council circulate this (the Panel's) report for comments to the eight Great Lakes States and the Great Lakes Fishery Commission, preliminary to further processing.

Yesterday's discussions brought out several things here that I would just like to enumerate very briefly. One was that there needs to be a strengthening or bringing together of State agencies. I think this was brought out very clearly by Dr. Linton, let's get something done. This was brought out by the gentleman from Illinois.

We had one that said a total need now for a new superagency. This was brought out by the gentleman from Louisiana. One said you can't maintain the State boundaries as cubicles, brought out by the gentleman from New Jersey. You can't depend on voluntary participation, also by the gentleman from New Jersey.

Outstanding State legislation was brought out by Charlie Swann who also cited the Wisconsin law. Need for interstate compacts with authority to act, also Charlie Swann.

#### THE FEDERAL LOCUS OF COASTAL ZONE MANAGEMENT—BASIC PREMISES AND CONSIDERATIONS

##### *Basic premises*

(1) The primary responsibility for management of the coastal zone must continue to be vested in the States (p. 8, report).

(2) The Federal Government can help the States, but the primary responsibility lies with the States; they are the key to a concerted effort (p. 9, report).

(3) In the Great Lakes region we must include the joint management aspects for the United States and Canada, which is a little different from what are the problems in some of the States.

(4) Laboratory, research, university participation in research and development for regional and local problems, as well as industry participation, must be conducted under State and regional (basin) auspices, if you are going to have a manageable organization.

(5) Acknowledging the presently existing organizations, economic, scientific, social, and political structures and developments; realizing that many of these have a *raison d'être* resulting from several centuries of man's cultural development and for the near future are "here to stay," it is prudent to examine and use our presently existing organizations and capabilities, and to proceed slowly in organizing large new organizations each time a new problem or new concept rears its bureaucratically beautiful head.

(6) State water management efforts must not be discounted but rather encouraged and augmented, and I cite a couple of examples:

(a) The Anadromous Fish Act has provided Federal assistance to the Great Lakes States and coming from this effort we have a booming salmon fishery in the Great Lakes. It suffers a bit from growing pains and a problem or two, but the fish are there in thousands. The alewife pests are being reduced somewhat in numbers, and the program shows signs of health survival and growth.

(b) The sea lamprey practically eradicated the Great Lakes fishery for the lake trout and large game fish. Through the efforts of the Great Lakes Fishery Commission, the Bureau of Commercial Fisheries, the regional and State provincial agencies, the lamprey are being controlled in Lakes Superior and Michigan; and, hopefully, we can continue that program of treatment and retreatment to enhance the fishery throughout the lakes.

(c) There are cooperative Federal-State-local programs for flood and erosion control throughout the lakes for the protection of publicly owned lands. Because of the side effects, the multiple effects, of erosion and need for local assistance, private ownerships, too, must be included in mutual beach and shoreline protection programs.

Now let's look at some of the considerations.



### *Multiplicity of agencies and departments*

Within the States' governmental framework in the Great Lakes region, there have been many organizational changes and realignments to streamline responsibilities and authorities for managing the States' water resources. This is contrary to the thoughts expressed in the Commission's report. Within the Federal Government framework the trend appears to be in the opposite direction. As a new water resource problem or item appears, the tendency is to create a new bureau or agency to study the problem. Paper piles up, but implementing or remedial measures are few and far between.

To quote a State administrator—

The (State) legislature designated the Department of Natural Resources to start a unified attack on water, air and solid waste pollution, using both Federal and State funds. But, as (State) marshaled its administrative, technical and financial resources in a coordinated attack on pollution, the Federal Government spread its anti-pollution assistance programs into a multiple maze of agencies and agency programs.

Thus anti-pollution programs, with basically the same objectives, are now administered by the Federal departments of Agriculture, Interior, Commerce, Housing and Urban Development, and Health, Education and Welfare. Similar problems crop up in the tiniest of programs such as the Anadromous Fish Act, referred to earlier, administered by the Department of the Interior.

Because the Department separates sports fishing and commercial fishing, the State must make two applications for funds totaling less than \$90,000 a year. When the State Department of Health and Social Services wanted to conduct a program to train staff members, it had to deal with at least five different Federal programs.

One section of the proposed Intergovernmental Cooperation Act of 1969 would allow joint funding when a State and local government unit participates in a Federal program. This clearly is another attempt to make Federal money more productive in reaching the goals and objectives of Federal assistance programs.

End of quote.

### *Overlapping authorities and interests*

On October 1, 1969, the Governor of Pennsylvania described the Federal coordination and assistance effort in the water pollution control program as "Washington's ham-handed way of dealing through an archaic bureaucracy." Departments and agencies have had and maintain overlapping authorities and responsibilities in water resources management.

As pointed out by our quoted State administrator, it is difficult to determine to whom or what agency one should go to cause something to happen. Not only does this situation cause confusion, but there is the inevitable competition for the dollar and the inefficiencies which result from divided responsibilities, overhead expenses, and costs for maintaining so many governmental units.

### *Plans and studies, another consideration*

Within the Great Lakes we have millions of dollars worth of studies and plans on the shelves. One Great Lakes State Governor recently remarked:

We've got so much paper stacked in (State) in the State Capital that we've got to move out, I'm a little apprehensive about the tendency toward piling up more and more paper.

Another Governor remarked:

We've got so "coitonpicking" many studies—let's get some action.

This was voiced by the gentleman from Illinois yesterday. These remarks of the Governors are well-taken, because our study and planning programs are overwhelmed by specific interests and minutia. There is a tendency to dodge or delay implementing as to what may be accomplished through studies.

For example:

(1) There are about 32 million people in the Great Lakes basin, and they are going to be there for some time to come. Their presence must be recognized and provided for. These people affect water quality and have a demand for adequate water supply.

(2) Physical and commercial geography aspects, in being and to be developed, must be recognized—steel plants, light and heavy manufacturing, good fishing and recreation—and fostered;

(3) There must be a balanced use of the local, State and Federal dollars that are available; and

(4) And so forth. Our planning and studies must concurrently look at the small details, and also explore and recognize the broad possibilities and limitations, including feasibility of plans.

#### CONCLUSIONS

Fundamentally, the Federal locus must be one that provides:

(a) Less fragmented or more positively an integrated Federal organization—pull the parts together—one that can provide goals and objectives to States which in turn will provide goals and objectives to localities and industry.

(b) Regional organizations—one or more States—to manage water resources matters which must be approached as multi-State matters—composed of the building block operating States and the participating Federal Government in an organization that will have the authority to act as needed.

(c) Federal funding assistance. Let's look at block grants rather than the grant-in-aid program, and let the State people at least try to manage some of their business there which the States can undertake as they have in establishing water quality standards.

(d) An international organization to manage or effect coordination of water resources matters with Federal and Provincial entities in Canada.

Ideally, the proposed National Oceanic and Atmospheric Agency may have possibilities as the central Federal agency if it supplants existing agencies, rather than becomes just another organizational layer.

No matter how hard we plan and how much money we spend to plan, Chicago and Detroit exist; we need them; and it will be quite a long time before we can conceivably make national lakeshores out of their present locations—real estate. So is it now with the existing system—the entities are there and will remain so presumably for some time.

Perhaps the Hoover report approach is what we need now, rather than one that may have been ideal for the United States in 1776 A.D. or as someone suggested, 1492 or earlier. Since 1957 we have been subject and have overreacted to the sputnik syndrome, the scientific and education gap, and cries for expanded research efforts. Characteristically, however, to meet the immediate sputnik challenge in 1957 we,

in the United States, trotted out a Redstone missile and put our "thing" in space. Later developments speak for themselves.

Creation of new agencies or just dollar expenditures will not necessarily contribute to solution of our problem. Now appears to be time when we should trot out our hardware and "get some action" as our quoted Governor indicates.

#### RECOMMENDATIONS

(a) That State-Federal partnership role be strengthened and broadened to include water resources management authorities for the U.S. basin areas. A Federal-interstate compact similar to the Delaware River compact could serve to effect such organization.

(b) That the Federal representative(s) on Federal-interstate compact agencies have full access to and be assisted by the various Federal departments and agencies.

(c) For the Great Lakes region, that an international partnership role be developed with Canada through an agency constituted similarly to the International Joint Commission, with authority to manage water.

(d) That fragmented water resources management authorities and capabilities be brought together, consolidated and integrated to reduce multiplicity of agencies and overlapping authorities and interests.

Thank you, Mr. Chairman.

DR. ALEXANDER. Thank you, Colonel. We now open the meeting for discussion. Yes?

DR. HERBERT FORLANDER. Herbert Forlander, Oregon State. I would like to address my remarks particularly to Mr. Duddleson's comments and then some that came later, relating to the type of work that should be done to help solve some of our problems.

I would first of all mention that people are at the edge of the sea for very good reason. You have heard a lot of us say that yesterday, and a lot today, and I submit that it is not just another land problem, but they are at the edge of the sea because of the sea's presence and the utilization there.

It was pointed out a few years ago by a former lieutenant in the U.S. Navy, Matthew Maury, and in books written about it since then, that we have a continuum whether we like it or not and what we do at the edge of the sea has a reason far beyond the continental edge. What we do at the edge has implications far beyond any coastal region.

We have a group such as the Department of the Interior which is responsible for the land, as has been well said. They have many responsibilities and jobs and are quite busy taking care of these particular jobs. The question was raised yesterday by the gentleman from Louisiana. He was asked what do I do with a million pounds of oxygen trioxide which somebody wants to dump? He challenged this audience as to what to do if this were dumped and nobody answered the challenge.

I submit that rather than just being regulatory, we need research to answer such questions with which we are stuck, whether we like it or not. We had similar questions when I was in the Puget Sound area from people wanting to dump. Where do we put it? We have examples of pesticides showing up probably thousands of miles from the place



they were introduced. They were introduced locally but didn't stay there.

Some of these are of long duration and we don't know how to solve those problems. We have examples of seashore animals, birds, dying by the thousands along the Oregon coast. This is happening right now. We don't know exactly why.

We will find DDT in the brain. The supposition is perhaps that this affected their equilibrium balance and they died because they couldn't keep up their heads. I am not abusing one agency or another, but we need a group with the time to sit back and look at not the 29 percent, but the 71 percent of the earth because it is a continuum.

If we add to this the atmosphere, then we multiply the problems. What I am saying is that we need a group with the time to sit back in a long-range way and see what the implementations are that will work in a coordinated way with local groups, but they need to have a range and sight far beyond the local coastal areas, even though they cooperated extensively with them.

Dr. ALEXANDER. Do you wish to talk about that?

Mr. DUDDLESON. I really don't disagree with anything you say. Please understand that I am not suggesting that I know the answer to this question of placement. I hope I didn't give that impression. I am skeptical, though, that most of the answers to the most urgent, most damaging and most irreversible coastal zone problems are to be found best in a group whose expertise and interest and main trust is deep-water ocean research and technology development.

My skepticism is that just as most critical problems of the coastal zone come by land, it may be that our solutions are to be found by looking essentially to the land, such as for the problem of the accumulation of pesticides which you mentioned.

If I could say one other thing. We are all in debt to Dr. Alexander and to Dr. Knauss and the other men associated with the Commission for placing the coastal zone on the public agenda as the Stratton Commission report has. I think that as we wrestle in the next 6 months or perhaps longer about these questions, including the question of placement in the Federal Government, all of us would be well served if the administration would release a report that the administration is now suppressing, sitting on.

You will recall that, for several years at least, the executive branch of the Federal Government had a committee on multiple use of coastal zone, chaired by Assistant Secretary of the Interior Stanley Cain. I expect that this report, which is published, has a great deal of information in it that would help all of us. I suggest that public discussion of these problems over the next few months would be improved if we had the information in that report.

The Budget Bureau reportedly is sitting on it because it has some funding implications in it. The Federal Government could, however, release this report for public discussion with an appropriation disclaimer on it that it doesn't represent administration policy.

Captain SUDDETH. My name is Captain Suddeth from Georgia. This question I guess is addressed to Colonel Goodsell. Were you suggesting that NASA might have some resources to contribute to NOAA?

Colonel GOODSSELL. I would say not directly, no; but maybe as a side effect.

Mr. WILLIAM H. LEWIS. I am William H. Lewis of the port of New Orleans. I am pleased to learn that there are other representatives of port agencies present at this meeting. I was apprehensive when I first signed in for this meeting that I would be alone in speaking for the port interests.

I would like to say that we in the port of New Orleans subscribe heartily to the statement that has been submitted to you by the Port of New Orleans Authority. I would however like to extend my remarks not necessarily in the context of this particular panel discussion, although some of my remarks are stimulated by remarks presented by Colonel Goodsell.

Certainly representing our port I must reach a point of considerable apprehension for the port industry in the general approach that is being made in this discussion and possibly that approach made in the committee report.

We detect a lack of representation and consideration of the port industry both in the committee findings and in the conference discussion. We are concerned with the apparent overriding consideration of the pure scientific, the purely theoretical, the conservationist environmental and esthetic aspects and the absence of the commercial and industrial and port considerations.

Obviously we are in many areas at a swing of the pendulum which must give more consideration to these conservation, environmental and esthetic aspects and to the recreational aspects of our economy and our society.

However, we detect that this may be done at the expense and the burden of our beneficial activities that are producing our economy, our wealth, our income, that permit us to indulge in these other activities.

For a long time the waterway projects of our Nation have stood by themselves in the measure of benefited coast. We find now, however, that these projects are being burdened by the side effects without a measure of the economic benefits that may carry those side effects. I would submit that in our State of Louisiana, as Dr. St. Amant has mentioned, we do not have a lack of planning. We do not have a lack of organization.

What Dr. St. Amant lacks are the funds to carry the activities of his department, the activities that he is attempting to perform within his own limitations. Rather than having grants-in-aid for studies of which we have too many, I submit that the means for him to perform his duties would accomplish his purpose and would avoid the burdens that are placed upon the other waterways aspects, the other waterway management activities.

We also detect in this trend a layering of agencies as Colonel Goodsell has mentioned to merely pyramid one agency upon the other, thereby lengthening the chain of study, of review and approval for those meritorious projects which we are seeking and need within our port industry for the improvement of other waterway activities.

We also detect here a trend to change the responsibility from well proven existing agencies such as the Corps of Engineers to others that are unproven in the field and certainly will require a period of adjustment, of education, both of those agencies and of the public

they serve, before they can be as effective as are those existing agencies today.

We also detect the possibility of the intrusion of the Federal Government into the independent port industry to which reference was made by the Port of New York Authority. This system of independent port activities has proven its worth to our Nation.

We have a highly competitive activity, one which is faced today with challenges due to revolution in the shipping industry. We do lack at the Federal level the complete coordination of our harbor and channel improvements, with those of our ship development. We would welcome an improvement in this particular activity. However, with the program of grants-in-aid to State agencies or other regional agencies, we would anticipate Federal control through the control of the dollar.

This would, of itself, reflect upon our port activities by determining in fact that one port deserved a channel improvement at the expense of another.

We believe this is basically wrong. Thank you, gentlemen for the opportunity of making this statement.

Dr. ALEXANDER. Thank you.

We have time, I think, for one more question.

Mr. ALFRED A. PORRO. I would like to address a question or rather an inquiry as to some remarks of Mr. Clotworthy, with regard to the proposed role of NOAA with regard to enforcement of provisions. Yesterday one of the speakers spoke in terms of enforcement and teeth in the law with regard to a Federal-State relationship, saying that voluntary participation would be bad. Today we are talking about the Federal role and I would just like to inquire as to the projection or the thinking as to what the enforcement provision should be in NOAA, not with regard to the States, but with regard to the various Federal agencies.

For example, should the Corps of Engineers have to have ultimate approval of NOAA before issuing any given permit, or is it visualized as merely being a coordinating agency?

Mr. CLOTWORTHY. I was very mindful of the points made by the speaker yesterday in pointing out that in at least the draft bill there was a conspicuous absence of teeth. Perhaps this is a failure, although I think that, talking to that point, first, you can read into the language the ability to do a little tail twisting if nothing else.

Now, coming to the question of NOAA and its authority and how it would interface with the corps, we have in existence today a voluntary mechanism between the corps and the Department of the Interior in which the effects on conservation are weighed before permits are granted. I see no reason why this sort of thing can't continue programs formalized to some degree.

It is quite apparent that both needs must be served. The sticky part of the question that undergirds all of this discussion of the coastal zone is what is your No. 1 priority in making the final decision? Is it the preservation of the status quo from an ecological point of view, from an economic point of view, or from a social point of view, or is it more positively the enhancement of any one of these criteria?

I submit that, since we inhabit this planet and just about everything that you can imagine is man centered, we have to think about the coastal zone from a man-centered point of view and hence the



improvement of man's life should be the principal criterion for making judgments.

Hence when we get to the question of shall we dredge a channel or not dredge a channel, some of these qualitative judgment factors have to enter into the decision.

Hence, while we have a reason to consider conservation because that affects the social value of the coastal zone, we also have to consider whether a channel is needed or is not needed. I guess this is the long way around, to saying that all of these factors must be weighed and it is implicit then in the organization structure that finally evolves that the mechanism for weighing them in the broader balance must be present.

Mr. PORRO. I think the problem would be who will have the ultimate say. I agree that there is going to be a lot of balancing of various factors. I don't submit it for some answers today, but submit it as a very serious problem area.

I sincerely feel that the enforcement provisions within the law make it very important. I think that is an area that should be given an awful lot of consideration.

Mr. CLOTWORTHY. I certainly agree.

Dr. ALEXANDER. Thank you, gentlemen.

Mr. CLINGAN. We will take a 5-minute break before the next panel. (Whereupon, a short recess was taken.)

Mr. CLINGAN. Our next panel, panel 6, deals with research requirements for coastal zone management.

It gives me pleasure to introduce the moderator, Dr. Paul Fye, president of Woods Hole Oceanographic Institution.

## PANEL 6—RESEARCH REQUIREMENTS FOR COASTAL ZONE MANAGEMENT

### MODERATOR

Dr. Paul M. Fye, president, Woods Hole Oceanographic Institution.

### PANELISTS

Robert Abel, Head, national sea grant program, National Science Foundation; Dr. William J. Hargis, Jr., Director, Virginia Institute of Marine Science; Dr. Harris B. Stewart, Jr., Director, Atlantic Oceanographic Laboratories, ESSA.

Dr. FYE. Congressman Lennon, Mr. Clingan, ladies and gentlemen, it is a great honor to be here with you this morning and to chair this panel on the research requirements of the coastal zone management.

Perhaps this panel should be one of the least controversial of the panel subjects, and perhaps it might have something most specific to say.

The task before us in his brief time is to explore the research requirements in the coastal zone and the coastal zone laboratories.

As the moderator, I do not wish to take time away from my distinguished colleagues, but I would like to make a few brief introductory remarks.

First, what are the research requirements for coastal zone laboratories? As a general concept, I think they should be looked upon as

centers designed to meet the critical needs of a unique area of our human habitat. They should provide at least in part the means for assaulting some very critical practical problems, and here perhaps we could see the first requirement of the research program of the coastal zone laboratory.

It should be, I think, primarily a research center with a mission and a purpose. The researches in these centers must help us to accomplish certain objectives in the coastal zone, must help us correct certain situations that we have created unwisely, then provide us, most importantly, with a reasonably sound basis for deciding whether to do or not to do certain things in this area.

In short, the majority of the researches of these centers should be directed toward solutions of special problems. I would prefer to characterize this, if we need to characterize it at all, as mission-oriented research rather than applied or basic, but the tag or title is not important. It is getting on with the job.

I think in the main these research centers should be university related, because of the nature of the research program, but the key ingredients of success in this activity will in this activity, as in most others, come down to the problem of getting the right people in the right places with the right facilities and money to accomplish their purpose.

It has been made abundantly clear that the larger part of the specific subject we are talking about is far more important than we realized, say, 5 years ago or 10 years ago, and probably more important than we are capable of realizing even now.

It is far more important than any single discipline on which the work will be based. What we are planning for is the environment of the future, and the future of the environment.

We must begin to plan what we will do on the good earth, which is still the most important planet in the universe, at least to the human race. This is the point where the land meets the sea, where both the land and the sea meet the air, and where we must live with all three phases, solid, liquid, and gaseous.

Our hosts in these panel sessions are our Congressmen, who must bear the difficult burden of pleasing most of the people nearly all the time. I am sure you will agree that this is a very difficult job.

We have been invited here to shed some light on the kinds of research work required if we are to use and preserve our coastal environment, and this might be of some assistance to our Congressmen, who must adjust these concepts and construct them into language which will eventually become law.

In this context, then, I would like to ask each of the panelists and each of the discussion members and questioners to follow, to comment briefly on what I expect to be a difficult concept to reduce eventually into concise language and law; namely, the criteria that should be considered when establishing coastal zone laboratories and their research programs.

I think this concept is very important, especially in the planning stages, and I think we should keep in mind the eventual purpose of these discussions.

Our panelists on this panel are well known to most of you, but let me introduce them and their topics to you.

First, Dr. William J. Hargis, the director of the Virginia Institute of Marine Science at Gloucester Point, Va. He will share with us some of his views concerning the nature of scientific information that coastal zone researchers must provide local management agencies before they are able to make the kind of decisions required of them in the framework of the democratic process.

Dr. Hargis is a fortunate selection for this subject, because the experience he brings to bear on it is drawn from three different perspectives, research, education, and adviser to the resource agencies of the Commonwealth of Virginia.

Next, it seems logical to call on Dr. Harris B. Stewart, Director of the Atlantic Oceanographic Laboratories of the Environmental Science Services Administration. Dr. Stewart will address himself to the role of the Federal laboratory in the total scheme of coastal zone management and development.

Dr. Stewart can speak of these things not only as an onsite director of the new research laboratory, but also as a man of substantial experience in questions of government policy on the Washington scene.

Finally, our third panelist, Dr. Robert Abel, Director of the Office of Sea-Grant Programs in the National Science Foundation, is a logical concluding speaker, for he will tell us where the money is coming from, perhaps, or perhaps where it is not.

For all his youth, Mr. Abel has had a long career in oceanography. I am pleased to note in passing that he is an alumnus of Woods Hole, and as Director of the Office of Sea-Grant Programs has taken an innovative idea and made it into one of the brightest examples of progress in ocean development and ocean management. It is no wonder that the Stratton Commission envisioned such a leading role for the sea-grant program in the work to be done in the coastal zone.

First, then, we will begin with Dr. Hargis.

#### **STATEMENT OF WILLIAM J. HARGIS, JR., PH. D., VIRGINIA INSTITUTE OF MARINE SCIENCE, GLOUCESTER, POINT, VA.**

As a background it might be worth noting that most of my last 15 years of professional experience has been as scientist and scientific adviser in and to local, State, and interstate coastal zone management agencies. The last 10 have been spent as official marine affairs adviser to the General Assembly and various State and interstate management and planning agencies concerned with Virginia's marine environment and its resources, and director of the State oceanographic agency of the Commonwealth. During this time, I have designed and built what might be called "coastal zone laboratories." Therefore, I have some familiarity with the matter under consideration.

Our assignment today is to treat the research requirements for coastal zone management units. Without entering into the interminable argument over the various "species" of research possible—basic versus applied, mission versus nonmission or the clearer, yet still overlapping, boundaries of science versus engineering, research versus development, and science versus technology—I would like license to broaden the scope of discussion to consider the possible roles of science and technology in coastal zone management and planning systems. From this, one can treat the research or technical services and capabilities necessary to such operations.



To determine what the scientific and technological requirements are, one should begin with the question: What scientific and technological services are necessary in order to do an effective job (after having carefully defined the essential features of that job) of planning and managing the resources of the coastal zone? Researchers, scientists, and engineers can help frame and define the question, but if the object is to plan and manage more or most effectively, then it is the planners and managers, whose needs must be met, who must initiate definition of the job. They must, of course, be competent to the task. The milieu in which the coastal zone management unit must operate in order to establish the administrative apparatus of its scientific agency is also highly relevant.

After laying these foundations, we can consider the nature of the scientific and technological establishments to be employed, used, or made available. Then, considering the nature and requirements of an effective, productive, responsive, and good quality scientific and technical establishment, it is possible to suggest the "anatomy" of an effective "lower or intermediate level coastal zone laboratory"—one which actually and regularly works with the in situ planning and management units.

Most of the study groups that have considered seriously the problems of coastal zone management conclude that the basic management units must be at least at the State or interstate level for various excellent reasons. Aside from the historical, constitutional, political, and other considerations, among the most potent reasons for this conclusion is a natural one—management of the level and type needed requires local knowledge and attention in detail. Experience indicates that such activities cannot be handled from remote central authorities. To centralize all coastal zone planning and management would be folly. Economically, it would be foolish, too. There is always a strong urge to simplify by centralizing. With natural resource management problems, this is often impossible. With coastal zone management units, it is impossible.

Since some division at lesser political and geographical levels must be suffered, the problem is to make the coastal zone management units local but not too local, to make them responsive to local needs but not witless, powerless, or otherwise ineffective. This is a political engineering problem. The principal point to be made is: To be effective, the national coastal zone management scheme must operate through lesser units. The research or scientific service complement(s) must also be organized along these same lines.

As others in this conference have indicated repeatedly, the complex nature of the environments and resources of the coastal zone is equaled or exceeded only by the complexity of user demands and needs, the numbers of users and the complexities of the institutions society has devised for dealing with them. Thus, an effective coastal zone management "system" (the term "system" is used advisedly since it is questionable whether in most, or many, cases any single agency will be used by a local, State, or regional subdivision in this capacity) has to be organized to handle such complex problems. Its scientific and technological advisory group, the "coastal zone laboratory," must be also. The personnel would be drawn from the scientific and engineering and other professional areas which are required to conduct balanced studies and give meaningful balanced and well-documented opinions.

It must be responsive to the short- and long-term needs of the managers and planners; hence, it must be coupled closely enough to serve, but not so much so that its research results and advice cannot be objectively obtained and given without fear of censorship or reprisal.

Since many of the questions or problems which arise can only be answered by a coordinated, multidisciplinary, broad scale, concentrated approach within a specific time frame, there must be scientists, engineers, and other technical assistants of a number, and variety, sufficient to the task. Because the problems are difficult, these persons must be professionally capable and they must, as a unit, be as concerned, or more so, with contributing to the management system as they are to making their marks with the scientific community. The skills and interests of the entire personnel must be capable of being focused on the problem at hand.

Though much of the research of this "coastal zone laboratory" would be of the "mission oriented" variety, it can and, for cogent and potent organizational and technical reasons, should support a reasonable amount of research of a more fundamental type.

Besides the applied and basic research functions, there must be a "firefighting" or emergency or contingency response apparatus and, if the technical activities are really going to be consolidated and coordinated within our "coastal zone laboratory," monitoring and survey capabilities must be present. Of course, not all have to be consolidated in the "coastal zone laboratory." Some of these functions might be accomplished within the organizational structure of the management segment of the system. Experience teaches, however, that they are essential features of an effective coastal management system.

If the technical agency is also going to be asked for economic evaluations on its solutions and advisories, some professional capability in economics should also be included in our "coastal zone laboratory" or, better still, "coastal zone institute" since the institute format is most suitable. Important legal and sociological activities also may be involved within our institute but they could work as well or better within the management agency, itself.

Aside from the scientific and technical capabilities, characteristics and activities mentioned immediately above and equally (or more) important, there must be regular mechanisms for conveying information and advice to our managers and planners. These data and advisories must be as unambiguous as possible, with suggested actions and priorities where options are necessary or available, and offered to the decisionmakers in form that is useful to them—and in time. This is an essential quality and one which cannot be met easily, given the nature of the problems and of scientists and academicians and their institutions.

Decisionmaking is accomplished at several levels—private as well as public, individual as well as corporate—and an important goal is to effect planning and management as harmoniously as possible. Thus, communications should be with user groups as well as with the public management units. Advisory services must be available to all important users and managers as they are needed. Further, advice rendered has to be objective, yet realistically useful. (And the technical adviser has to be prepared to accept his role as an adviser with all of its limitations. He must have, of course, the necessary determination and

initiative to attempt to persuade when evidence indicates that a management decision or planning action is unwise or not feasible.)

There must be rapport, interaction, responsibility, respectability, capability, reason and practicality in the "coastal zone laboratory or institute" unit. The scientific and technical advisers must, in the last analysis, be allies of the public planning and management agencies they serve—with certain obligations and loyalties, objective yet partisanly so in the public's behalf. Other interests will be represented in the give-and-take of hearings, some of which can be of the full public type and some of the antagonistic-protagonistic quasi-judicial sort.

Aside from the necessary scientific and technical personnel, with the necessary supporting personnel, it is clear that adequate scientific and engineering facilities are needed by our institute. Among them are the latest in land and ocean vehicles and platforms, laboratory equipment, computers, and simulation devices.

Despite opinions held in some quarters, coastal zone research is not necessarily less expensive than oceanic research. In place of costly vessels and deep submergence vehicles, one has need for complex arrays of instrumentation for coastal research, monitoring and control-feedback operations. Hydraulic scale models of the estuaries and coastal areas in question, as well as mathematical simulation capability, are vital to effective coastal zone planning management and research. These are costly items—but necessary. For example, it cost about \$600,000 to answer the question, "Will deepening the James River Navigation Channel to 35 feet damage the seed oyster beds of the James Estuary?" The greatest cost was a \$300,000 plus hydraulic scale model of the Tidal James. This was expensive; yet the stakes, a \$45-\$50 million channel and \$10-\$15 million shellfishery, were at question.

With the costly personnel and facilities described above, it is possible for our "coastal zone laboratory" to perform yet a third important function—that of training future coastal zone scientists, engineers, planners, and managers. Effective coastal zone management will be a problem as long as man and society exist and replacements will be needed.

To enhance its program and broaden its capabilities, the "coastal zone institute," of which I have been speaking, should have access to the capabilities, talents, and services within the faculties of the private and public institutions of higher learning within its sphere by formal and informal affiliations, service arrangements, and through the medium of grants to those institutions. Access to capabilities of industry is also essential.

The laboratory must be well and permanently supported by the State management and planning agency(ies) it serves (preferably directly by the General Assembly) and it must be protected and given longevity and continuity. It should have access to all possible sources of funding.

It can either be affiliated with, even part of, (a) the management agency, (b) an independent research and service agency of the political subdivision, serving all management and planning agencies in that subdivision, if separate, or (c) a part of a public institution of higher education. If the first, it must be buffered from destructive pressures; if the last, it must be separate, viable and responsive and independently financed institute or similar identifiable scientific unit capable of



operating in the field, laboratory, and hearing room as a coordinated, coherent, and cogent unit. The traditional academic, departmental organization will not provide what is needed by the coastal zone management agency. However, as indicated elsewhere, academic scientists and engineers can and should provide valuable assistance through the various arrangements available and new mechanisms can be developed.

I must hasten to add that I do not necessarily advocate 33 or more complete, full-scale, coastal zone laboratories or institutes with all the capabilities indicated. Some coastal zone management organizations could use scientific research and service units with lesser capabilities, rely on hired consultants, or even band with their neighbors to support and use a joint coastal zone institute. But ready scientific and technical services are absolutely necessary to the effective functioning of any coastal zone management unit. (On the contrary side, lest we conclude that small research units will be all that are needed, it should be noted that there are a large number of scientists within the three member agencies of the Chesapeake Research Council and many of the management units have some technical capability of their own; they are still not sufficient to meet Maryland's and Virginia's separate or even joint needs.)

Any Federal laboratory complex (and many arrangements are possible within the existing facilities and framework) or other regional coastal zone laboratories or institutes that exist or are developed should and can be "waffled into the system" but the bulk of the management support work will have to be done at the level of the individual coastal zone management unit.

Financial support for the local coastal zone institute or laboratory should be supplied from several sources. The States, themselves, must make a firm and continuing financial commitment(s) to their local, State or interstate coastal zone management unit(s) and the attendant "coastal zone institute(s)." Other support on matching and nonmatching basis can be supplied from traditional and even new Federal sources. Private foundation support can also be utilized.

Among the Federal financing possibilities are:

1. The lead agency for the national coastal zone management system (whichever it may be, existing or new) must be able to support both the management units and the "institutes or laboratories."

2. The various granting and contracting agencies within the Department of the Interior, which already have strong legal interest and commitments in the coastal zone, i.e., Bureau of Commercial Fisheries, Federal Water Pollution Control Administration, Office of Water Resources Research, Bureau of Sport Fisheries and Wildlife and others, should be included. The new Office of Marine Resources might also be utilized since the entire array of resources and resource problems would be involved.

3. The Office of Sea Grant Programs, which has a strong "applied" bent and considerable interest in coastal zone problems, is another important funding source to be fostered and used.

4. The U.S. Army Corps of Engineers and its associated problem-oriented units must be utilized.

5. Department of Commerce units, namely ESSA, also must be involved.

6. Department of Agriculture, i.e., its Soil Conservation Services and other units, can help.

7. Department of the Navy, where legally interested, will be able to assist.

8. Other offices of National Science Foundation have given support to this field in the past and should still be able to do so.

9. Department of Transportation can be legitimately involved.

10. Department of Health, Education, and Welfare also has a role in coastal zone problems.

11. Various other Federal departments and agencies will be able to assist as applicable.

Due to the complexities of the problems facing our "coastal zone institutes" or laboratories and to their legitimate impingement on the responsibilities of different Federal agencies, no Federal sources of support should be closed. Since additional money is necessary to speed settlement of the important and complex difficulties of the coastal zone, it is especially important that the Congress and the State legislative bodies lend strong monetary support to all the agencies mentioned above. Additional moneys are needed.

In summary, each coastal zone management and planning unit (and there must be many) will require close support from an adequately staffed, involved, and dedicated scientific and technical unit ("a coastal zone institute"). These "institutes" will have to be of size suitable to the services required by the "coastal zone" management and planning units they must work with. They also must be of suitable technical breadth. "Coastal zone institutes" should be used in education and fundamental research and they should have the ability to draw upon the capabilities inherent in nearby institutions of higher learning. To provide such "institutes" or "laboratories" with adequate organization, personnel, and facilities will require long-term and strong support from State and Federal legislative bodies. The resources of all Federal agencies should be available for financial and other support of the "coastal zone laboratory or institute" system when it is needed.

Thank you.

Dr. FYE. Thank you, Dr. Hargis.

Next, Dr. Harris B. Stewart, Director of the Atlantic Oceanographic Laboratory, in ESSA.

#### **STATEMENT OF DR. HARRIS B. STEWART, JR., DIRECTOR, ATLANTIC OCEANOGRAPHIC LABORATORIES, ESSA**

Dr. STEWART. Thank you, Dr. Fye.

The immediate ocean shoreline, the Continental Shelf, our estuaries and harbors, and the Great Lakes constitute what is now called the coastal zone.

But the term today connotes much more than a mere geographic area. This is the area where some 75 percent of our population is concentrated, so it is also the area where not only the sea and the land meet, but—more importantly—where the sea and man meet.

Thus the coastal zone is where the demand for recreational facilities is greatest, where the major water transportation routes terminate in our great port cities, where our greatest concentrations of municipal

and industrial wastes accumulate, and where the specter of pollution looms the largest.

The coastal zone is where many of our commercial and sport fish spend at least a part of their life cycles, and where our first halting steps toward mariculture are taking place. It is where our major marine petroleum resources are found. It is the locus of our coastal shipping and the terminus of our transoceanic shipping.

It is where many of us want to live, or at least go for vacation. It is where we can get cheap coolant water for our powerplants, and where we can bulkhead and fill to make expensive real estate that can be sold at a profit.

It is also the location where many of our wetlands, marshes, mangrove swamps, and coastal ecological niches are being singled out for the establishment of conservation areas.

Our coastal zone is all of these things, and that is where the problem lies. Each of these is a legitimate use of our coastal zone, but as the activity in each of these use areas increases, it eventually reaches a point where it is out and out in conflict with another use. We have already reached this point in most of the populated portions of our coastal zone.

I might add parenthetically that again it is a problem of the interrelationship between man and the sea. It is a people problem.

Garrett Hardin in his article on "The Tragedy of the Commons" that appeared in *Science* last December—volume 162, pages 1243–1248, December 13, 1968—provided the sociological framework for this problem.

If I may be allowed to put his discussion in my own words, it runs something like this: If a common pasture will support 100 head of cattle, and each of 10 herdsmen has one cow each pastured there, there is no problem. If each herdsman increases his own herd to 10 cows, the commons is then supporting its 100 head, or all it can without degrading the total resource.

Then one of the herdsmen stops and thinks and decides that if he adds one cow to his own herd of 10, the worth of his own holdings will be increased by 10 percent, but his share of the costs resulting from the degradation of the commons by adding only one cow over the 100 the commons can support is only 1 percent, so it is some 9 percent to his advantage to add that one cow. Other herdsmen get the same idea, and cow after cow is added until the commons is totally destroyed.

The same situation holds for our coastal zone. Take, for example, the use of our coastal zone for the disposal of industrial and municipal wastes. So long as there are few people and few industries using the coastal zone as a self-flushing disposal system, there is no real problem.

Then the number increases. The cost for the individual plant to process its waste before disposing of it harmlessly into the coastal zone is many times more than that plant's share of the overall social costs of the ensuing degradation of the receiving waters, which, of course, is shared equally by all coastal zone users.

Thus, our coastal zone, like Hardin's commons, is doomed, unless some means is found to halt this relentless march toward destruction.

The coastal zone authority concept proposed by the Commission on Marine Science, Engineering, and Resources is one method of controlling this otherwise destructive process.



I believe that the establishment of such coastal zone authorities should be primarily a State or regional responsibility, and that the role of the Federal Government is mainly one of providing support to the State—both financial support and support in the acquisition of the basic understanding of the coastal zone environment on which valid judgments on coastal zone uses must ultimately be based.

I reiterate, the really essential part, and one of the major roles of the Federal Government, is to provide the basic understanding of the coastal zone requirements.

Before getting into the research requirements, there is one other point that I would like to make. There are two alternative costs related to the coastal zone: The cost of doing something, and the cost of doing nothing.

It is my contention that the cost of doing something, although an immediate cost, is considerably less than the eventual costs to society of doing nothing—it is the “Tragedy of the Commons” exemplified.

The real problem, it seems to me, is that we as a people are prone to defer the immediate costs because they are immediate. The unavoidable result is that we eventually are forced to pay the much greater costs of cleaning up the mess that we were unwilling to pay the relatively small costs to avoid in the first place.

The requirements for coastal zone research, therefore, are related first to the need for the environmental understanding on which sound decision on coastal zone use can be made, and secondly to the need to provide this understanding now at considerably less cost than the costs related to some future attempts to make up for our shortsightedness in not doing it now.

When it comes to the requirements for research in the coastal zone, the differences between the traditionally basic research activities of the universities and private institutions and the more mission-relevant, mission-oriented, or applied research missions of the Federal laboratories become less distinct.

I have always objected to the artificial distinction between “basic” and “applied” research, for one man’s basic is another man’s applied.

In the coastal zone, the problems are so numerous and diverse that almost any research leading to a better understanding of the complex processes operating there is by definition relevant to the equally complex problem of coastal zone management.

So I would find it difficult, really, to separate out discrete and unique research roles for the universities and for the Federal laboratories. This is one of the many areas where the universities and the Federal laboratories must work together for their mutual benefit.

The problems of the coastal zone and the research needs were described by the Commission’s Panel on Management and Development of the Coastal Zone, and are published as part III of volume I of the Commission’s panel reports. This document contains important information for anyone concerned in any way with the coastal zone.

Although we have learned a great deal about the coastal zone, much additional information is needed.

The research effort should be aimed at “understanding” this Nation’s coastal zone. This means an adequate understanding of the dynamics of estuarine circulation, the advection and the diffusion, the water budget, the movement of sediment as it relates to channel filling and

deepening and to coastal erosion and deposition, the life histories of the organisms that populate our coastal zone, and their very complex interrelationships with the highly variable coastal zone environment, the basic physics of shoaling and breaking waves and of longshore and rip currents, the development of inundating storm surges related to intense coastal storms, the coastal runup of tsunamis, the movement of hurricanes, the capability of coastal zone waters to receive wastes without undesirable side effects (it is really how much of what can be introduced where for how long a time without creating more problems than it solves), the ocean-atmosphere interactions, and the land-sea interactions.

It is only with an understanding of the coastal zone as a highly complex and highly variable ecosystem that we can predict what the overall effect will be of man's proposed changes to that system.

It does not matter if we contemplate a channel deepening for deeper draft ships, bulkheading and filling for a new shipping terminal or real estate development, a new causeway to an offshore island, a new marina, a new powerplant to use coastal waters for cooling, a new park, a wildlife refuge established, a mariculture area set aside, an additional sewer outfall constructed, or any of a number of other uses to which we put our coastal zone. It really does not matter what we contemplate. The *sine qua non* for sensible value judgments for the use of the coastal zone is a basic understanding of the zone itself. For it is only with this understanding that we can predict the effects of the changes we contemplate.

I might add parenthetically here the need for what I would like to call legal research and development, legal R. & D. In effect, this is preventive maintenance. This is doing the legal research work in the coastal zone now to avoid the lawsuits that could come up later on.

I also might add that we should look at the coastal zone as a total man environment system, and we must do the research work relating to the interaction of man and his activities with this coastal environment.

It is to the Federal laboratories that we must look for that part of this fundamental understanding that relates to the mission of the agencies for which they carry out research.

Twenty-four Federal departments, administrations, agencies, bureaus, commissions, councils, and offices have, as a part of their missions, responsibilities related to the coastal zone. The agencies are listed by the Panel on Management and Development of the Coastal Zone, in their report ("Panel Reports of the Commission on Marine Science, Engineering, and Resources," vol. 1, pt. III, pp. III-81 to III-105).

I believe these groups should be encouraged to carry out mission-relevant coastal zone research. Coordination will, of course, be necessary to assure that research results are shared with other researchers, that major problem areas do not go unstudied, and that the concentration of several research activities in the geographically restricted coastal zone does not result in an undesirable duplication of effort. In summary:

1. Any research in the coastal zone can be considered as applicable to the basic requirement of understanding the coastal zone as a complex ecosystem.

2. The universities and the Federal laboratories do not have unique roles, but must work together to further this understanding.

3. The cost of doing something now is much less than the ultimate cost of doing nothing.

4. Future value judgments on the uses of our coastal zone must depend for their validity on a basic understanding of the area as a total system.

5. The coastal zone research work of the various Federal laboratories must be adequately supported and adequately coordinated to insure that the several efforts are all working cooperatively toward the same goal of coastal zone understanding, an absolute essential for coastal zone management.

The problems related to the coastal zone constitute what is probably the major marine science problem facing the United States today.

In an era when the socially relevant problems are the ones that get the attention and support, it behooves the Nation's oceanographers to direct at least a portion of their attention to problems in this category.

For the Federal laboratories, it is essential that their research relate to the missions of their parent agency. For many of the Federal agencies this means research in the coastal zone, and a vigorous program of coordinated coastal zone research is absolutely essential if our estuaries, harbors, and near-shore areas are not to become part of "The Tragedy of the Commons."

Thank you.

Dr. FYE. Thank you, Dr. Stewart.

Next we will hear from Dr. Robert Abel, of the sea-grant program.

#### **STATEMENT OF DR. ROBERT ABEL, DIRECTOR, NATIONAL SEA-GRANT PROGRAM, NATIONAL SCIENCE FOUNDATION**

Dr. ABEL. Thank you, Paul.

Good afternoon, diehards.

You know, the last man always has the option of simply saying, "I agree with everybody else," and closing the book. However, I don't choose to pick up this option, and in fact would like to speak not only from my position in the national sea-grant program, but also based upon my former experience with the Interagency Committee on Oceanography, which, as you know, was itself concerned with coastal zone problems.

It sometimes seems that the greatest difference between the situation in oceanography today and the situation a decade ago has to do with several exhaustive reviews, examinations, and analyses which have now been made of all aspects of marine science and technology in the United States.

In this specific instance I refer to the outstanding report, "Our Nation and the Sea," of the Commission on Marine Science, Engineering, and Resources, and particularly its supporting document, volume I, "Science and the Environment."

In addition, in developing my thesis, I have relied on more recent reports prepared under the aegis of the National Council on Marine Resources and Engineering Development.



The coastal zone problems which they describe have been defined, explored, and discussed in terms of solutions by several consultant panels convened by the Federal Council on Science and Technology, by the President's Science Advisory Committee's Panel on Oceanography, by the National Academy of Sciences Committee on Oceanography, by the National Academy of Engineering, Committee on Ocean Engineering, by the National Security Industrial Association, by the Committee on Resources of the National Chamber of Commerce, and by several scientific and professional societies.

Considering the diversity of backgrounds of these organizations, there is surprising conformity in the manner in which they have approached the problems and similarity among their recommendations for solutions thereto.

The Commission emphasized the need for broad surveys to establish basic national inventory information, followed by continuous and detailed studies of specific local conditions.

These recommendations were made in light of the extremely complicated and difficult balance which must be the keyword in any treatment of coastal zone problems, and which has been alluded to by almost all of the previous speakers.

This need for balance is evident in considering the mission of a coastal zone laboratory, which is to provide practical and applicable scientific engineering knowledge on which the management and utilization of the coastal zone may be developed rationally.

It specifically involves resolution of multiple-use problems, or, when complete and satisfactory resolution is not possible, information on which judgment may be exercised regarding the best public interest.

Accordingly, research requirements would encompass information and data respecting pollution and waste disposal, environmental maintenance and improvement, conservation, efficient harvest of natural resources, and, of course, recreation.

These laboratories, and for this particular purpose I will lump together and not distinguish between the Federal and the university laboratories, should be able to develop models from which the consequences of human actions can be predicted.

Further, coastal zone laboratories research should involve the social sciences, including law, economics, sociology, and administration of marine science programs. Information and extension services should be developed and provided, as well.

To describe specific kinds of research requirements, it is in order to quote from the report of the Panel on Management and Development of the Coastal Zone of the Commission, and I should like to read into the record their statement that:

Much more needs to be known about the physical processes that shape our coastlines and estuaries: How, for instance, combinations of waves, tides, and currents affect deposition and erosion; the sources of beach sands, and when and how it is naturally removed from beaches; and the effect of storm surges.

Simulation of observed conditions through the construction of hydraulic scale models and mathematical models will improve predictions of the effects of change.

More needs to be known of the marine organisms and biological processes of the coastal zone. Detailed information on the food web, tolerances of each species to environmental change, and the distribution and abundance of organisms must be obtained to make the effective use of this rich region.

Lack of basic understanding prevents the effective use of nearshore waters.

On the one hand, the ill effects of our actions cannot be foreseen in time to correct them. On the other, when irreversible events might occur, we do not know how to prescribe the right amount of corrective action and are forced to base regulations on the most conservative estimates of probabilities. The solution of engineering problems suffers from the lack of knowledge of the dynamics of in-shore water movements. There is no theory suitable to describe the turbulent motions of water particles in the surf zone, nor can our instruments accurately measure currents in this area. In the process of altering our land and water for beneficial purposes, man frequently produces catastrophic side effects. For instance, dredging is carried on for a variety of reasons, such as

Creation of useful property, marinas, recreational areas; improved flushing action in bays, and estuarine creeks; commercial mining of sand and gravel.

It is not only what is done along the shores that affect coast and beaches. Action far upstream may have drastic consequences. The flushing of minor embayments within estuaries is heavily influenced by seasonal fluctuations in salinity, largely through natural changes in river flow. Regulations and evening-off of river flow may prevent flushing actions and allow buildup of predators which rob shellfish beds of much of their richness. Basic research in microscale estuarine circulation must continue if predictions of the effects of our actions in regulating the flow of rivers are to be made.

With apologies to Taylor Pryor and any other Commission members who are here for the blatant plagiarism, I did think it was that important that that part of the Commission report be read into the record as illustrating the kinds of research information the coastal laboratories ought to be responsible for.

The committee goes on to state the needs for increased research on the dynamics of estuarine waters, on the identification of specific pollutants, and the tracing of their effects, and on the mechanisms whereby organisms take up and accumulate various kinds of pollutants—or in connection with coastal zone pollution problems.

Increased knowledge of the coastal zone region and its habitats is necessary to conservation and management of fisheries resources. Survival requirements of young fish are insufficiently understood. More information is needed respecting rhythms in the relationships governing physical and biological environments over long periods of time.

The question, of course, is how to establish a system of laboratories which can most competently carry out the research needed for solution of these problems and for all aspects of coastal zone management. Both the Commission and subsequently convened advisory groups agreed that such research must be carried out by university laboratories within the rubric of coastal zone laboratories, and they recommended creation or continuation of several such laboratories, and that they must be multidisciplinary in scope.

The advisory groups, starting with the Commission report, developed in most cogent terms a rationale for a U.S. Government position respecting the coastal zone laboratories, and guided by the need and objectives of the Nation in the maintenance, restoration, and proper use of the coastal zone.

For instance, one of their most important contributions, not only to the question of laboratories per se, but to the national program at large, was a suggested designation of coastal zone regions, based on consideration of ecological regions, commonality of problems, and geographical factors.

They suggested that the coast of the United States be considered in terms of 10 major areas: Northwest Atlantic, Middle Atlantic, Southeast Atlantic, Gulf Coast, Pacific Southwest, Pacific Northwest, Alaska, Hawaii, Great Lakes, and Puerto Rico/Virgin Islands areas.

Within each major zone, subordinate regions were identified, according to differences in ecology.

A final consideration in identifying research requirements for coastal zone management must concern the necessity for extremely close working relationships with the Federal laboratories and coastal zone authorities, and this, too, has been brought out by most of the previous speakers.

Also recommended by the Commission, and they are being considered for implementation by the administration, are these same types of laboratories.

Most of the great universities now involved in marine science and technology have long and well-established histories of working closely with State governments and Federal agency laboratories, as exemplified, for instance, at Woods Hole, at La Jolla, at Seattle, Honolulu, Miami, and Galveston, for instance.

Accordingly, no problems are foreseen in this direction. In fact, an important thrust of the national sea-grant program has been to encourage even closer collaboration in this regard, and strengthening of the ties among these several groups, and we believe this to be the way in which our host, Chairman Lennon, and his colleagues designed the sea-grant program in the first place.

Thus far, the program has sponsored coherent area and institutional grants to several universities, which might be closely if not identically described as coastal zone laboratories, including such as the University of Washington, the University of Hawaii, Oregon State University, Humboldt State College, Texas A. & M. University, Louisiana State University, the University of Delaware, the University of Rhode Island, Wisconsin, Michigan, Miami, and of course the Virginia Institute of Marine Science.

There are two ways of interpreting the topic to which we have all addressed ourselves: that is, research requirements for coastal zone management, first, in terms of environmental questions to be answered, to which I have already addressed myself, and secondly, in terms of how one gears to answer these questions.

Programs in the institutions that the sea-grant program sponsors thus far, in answer to both of these, are multidisciplinary. They are applied rather than basic, although not shutting out basic research. They are clearly oriented to the coastal zone, and they clearly reflect cooperation with State and local governments.

As a for instance, and I would have hoped for somewhat less modesty on the part of Dean Knauss in the first panel, whose sea-grant program at the University of Rhode Island exemplifies much of what the sea-grant program aims to do, the research training and the extension services under his direction center mostly in Narragansett Bay, and, if you are looking for coastal zone problems, you sure don't have to go much farther than Narragansett Bay, but they also apply to most of the New England area.

They include work in national fisheries, and in aquaculture, in-depth studies of the economics of various uses of Narragansett Bay, including, I might add, the very difficult problem of assigning value to such things as salt marshes.

They include also a large extension program, including the New England marine resources information program, pollution studies of



Narragansett Bay, training of commercial fishermen, marine research economists, ocean engineers, and a new post-graduate degree in marine affairs, as well as sponsoring the Law of the Sea Institute.

On the gulf coast, a typical coastal zone effort is carried out by John Calhoun's groups at Texas A. & M. This is of somewhat similar nature, but addressed largely to the gulf coast environment.

As an example of close interrelationship with Federal, State, and local governments, and with industry, Dr. Calhoun is currently carrying out a series of six conferences dealing with various aspects of the coastal zone protection and enhancement.

On the west coast, the University of Washington and Oregon State University have complementary programs wherein in each a dozen departments are collaborating on research and development themes aimed at their regional coastal zone environments.

For instance, Oregon State University has developed a superb extension service affecting critically occupations in their near and relatively distant area, all up and down their coast.

The University of Washington has not only mobilized one of the strongest academic powerhouses in this country in participation in the sea-grant program, but they have brought along a system of five satellite community colleges to assist in the training program.

The reasons leading to sea-grant focus on the coastal zone stem mostly from the deliberations of the Sea-Grant Advisory Committee. When they first sat down with the National Science Foundation, the idea was to determine the specificity of the sea-grant program; that is, what could this program do that all of the other agencies described by previous speakers either cannot or would not necessarily want to be accomplishing in either the public or private domain.

Their recommendations were that this program ought to strive to bring many departments in universities together under common coastal zone themes, that it ought to stimulate industry into partnership with these laboratories, and, you know, normally industry becomes identified as a monster in this context, dumping filth into our waterways, but in all fairness, industry must also be considered to be a big consumer of the coastal zone products and services, and it is also, needless to say, a major employer of the persons who work near these areas.

We were also recommended to train the engineers, technicians, lawyers, economists, and the sophisticated ecologists who are to do the things that the other panelists have been calling for.

We are to perform complicated systems studies of the land-sea interface, such as one that we are participating in at Long Island in collaboration with some county governments and private research institutes, to sponsor coastal zone resources studies, and most importantly of all, to stimulate local initiative.

In short, the sea-grant program already has developed the team of eight senior and five junior sea-grant colleges, so to speak, all except one of which emphasizes work in the coastal zone. This is not a program which is ready to roll. It has been at cruising speed for over a year already.

What I am saying is that there is a crucially important role for the university laboratories to play in the coastal zone campaign. Our program is proving that they play it exceedingly well.

Dr. FYE. Thank you, Dr. Abel.

Ladies and gentlemen, there you have it.

As you can see, we have not designed a research program for a typical coastal zone laboratory, but then I don't think that was our assignment, or at least, as directors of laboratories and programs, we realize how futile and unwise that might have been.

I think, rather, there has been presented a considerable body of guidelines and philosophy which will be useful in the development of such specific research programs.

I don't know how many are anxious to participate in discussion or raise questions. Apparently we have about run out of time. One assumption I can make is that each and every one of you has something you wanted to say, or else you would not have stayed until the end, or I could assume that you were here solely because you wanted to hear what Bob Abel had to say about money.

I wonder, Mr. Clingan, if it would be in order to ask for a showing of hands of how many people would like to participate in the discussion or raise questions and suggest that any long statements might be submitted for the record.

Is that all right, Tom, and hear at least brief statements or questions? How many are anxious to ask questions?

I see only four hands. We ought to be able to take care of all of them.

Would you identify yourself?

Please go to the microphone.

Dr. NELSON MARSHALL. I am Nelson Marshall, from the University of Rhode Island.

I feel as though Bob Abel was outvoted by the first two speakers in terms of a certain neglect, because they talked so much about the science and technical, and I recall one or two statements which are essentially that maybe we should have a little nontechnical work along with it.

I think it has to be a lot more than "maybe." I think we all should look, in order to appreciate this point, at some of the studies that have come out in the past years, like the hurricane barrier studies of Narragansett Bay, in which the economic dimensions of the study were very superficial, and very unsophisticated, and would not stand up at all today in terms of the kind of scrutiny given by resource economists. I think you can cite many other subjects like that.

We have a Steering Committee on Aquaculture in the New England Regional Commission. This committee, on which I serve has essentially refused to proceed with technological studies of aquaculture unless they are strongly concurrently blended with the social, economic, legal, and political aspects of the problem.

This is not because I sit up and holler about it. This is a view that has been evolving within this group.

Now, there has been a lot said in the last 2 days about university-oriented work. The breadth that we are talking about here, and that Bob Abel talked about, is possible in a university system, or in a strong affiliation with a university system. I think this is one of the main reasons we have talked about university-oriented work, university-oriented laboratories.

There is another problem. One of the reasons universities are strong—I hope that they are considered strong—in that there is an independence of research spirit in a university, and yet we are talking

about jobs to be done. Thus there is a difficulty in sustaining the independence and still getting at the job.

I think in considering coastal research laboratories we should address ourselves to this question. I think one of the ways of accomplishing this, in my own personal opinion, but I guess widely shared, is to be sure that the universities make a strong commitment to these programs, so that the workers there feel that they are not obligated to follow set, directed patterns.

This requires a certain limited mass of workers in order to be able to allow for this independence, and still by some guidance get on with the desired programs.

Dr. FYE. Thank you, Dr. Marshall.

Dr. Breslov.

Mr. LLOYD BRESLOV. I am Lloyd Breslov of the Coast Guard.

I would like to ask Dr. Hargis what he meant when he said development of firefighting capability.

Dr. FYE. Dr. Hargis.

Dr. HARGIS. Firefighting capability in this instance is in quotes, and it refers to this type of semiscientific or quasi-scientific activity that comes up if somebody called and said, "I have a bed of oysters dying. Come up and tell me what is wrong."

It did not refer to putting out fires as fires, but only economic and political and sociological and semiscientific fires.

Mr. BRESLOV. I was wondering. I think of things in terms of short-term and long-term things, again search and rescue type of firefighting tasks, and disaster control such as oil spills. You did not have that in mind.

Dr. HARGIS. That is correct.

If I might, Mr. Chairman, comment briefly, Dr. Marshall and some of the other speakers have stressed university arrangements, and I think this is of course worthwhile, because a great deal, perhaps most outside of the Federal laboratories, is being done within this context.

I would say, however, that for the first level coastal zone scientific advisory system, it is essential that it be identified, that it be viable, that it not be up to the whims of some administrator as to whether or not it is going to survive.

Therefore, it would seem to me that it would be likely an institute type of arrangement, either outside of and affiliated with or inside of the university teams, but identified, viable, and permanently funded, and available to the management people.

Mr. BRESLOV. Thank you.

Dr. FYE. I saw four more hands.

I would like to ask you to be concise and brief in your remarks, and submit longer ones for the record, if you would like.

Mr. STEPHEN KELLEY. Steve Kelley, from the city of New York.

I would like to ask Dr. Fye to continue with his opening remarks and amplify his thinking on the criteria for the establishment of the coastal zone laboratory.

Dr. FYE. Thank you very much for the opportunity. I wish that we had time to do it.

I would enjoy doing it. I don't think I should take the time from the people on the floor who would like to participate.

I think the ideas are developing very well. If I may, I will talk



to you about it in private, and not take the time right at this moment.

Dr. Chapman.

Dr. W. M. CHAPMAN. At the risk of boring you, I am going to talk about coastal zone laboratories anyway.

I have been sitting, having a little difficulty thinking about coastal zone laboratories and coastal zone management authorities in the light of our experience in California, and these thoughts maybe have no value to the rest of you, but they have been turning over in my mind this morning.

It seems to me like we have got an adequate number of laboratories in California, and really along the west coast, that our problem is not number or diversity of laboratories, or activities, but in almost every instance I can think of, a deficiency of funds for those laboratories to adequately carry out their research programs.

The coastal zone laboratory term does not very well fit our situation, because we have such institutions as Hopkins Marine Station, for instance, and the USC laboratories, and the Scripps laboratories that are coastal zone laboratories already, but also work in other parts of the world ocean.

In fact, a new designation just does not seem to me to be terribly utilitarian, or attractive. What we really need is new money.

If you call these this as a name in order to con the Bureau of the Budget out of some more money, and it works, fine. My experience is that it will not work.

I think that there is a difference in our thinking on the west coast from that on the east coast and gulf, because of our situation on the western side of the country, and having both our ocean and atmospheric weather come at us from far over the horizon, and affect materially the natural processes in our immediate coastal zone without our being able to evaluate or study or predict those effects unless we look far over the sea.

That puts us perhaps a little more, when we are talking about coastal processes, in a process of quite large dimension, and in some instances of global dimension.

I think that is a difference in thinking that will always plague us in talking with our colleagues in the gulf and the Atlantic coast.

I don't think the differences should be a controversial one at all. It is due to natural circumstances. We are more broadly interested in something from the coastal zone standpoint.

Comment came up this morning with respect to the dichotomy of either doing more research or getting things done, which is, I think, an extremely false one, and should not enter into our discussion at all.

I speak ordinarily as an industry representative who wants the beneficial output in research. I want to get things done, but as you know, Mr. Chairman, I spend almost all my time fomenting additional—what Stu does not like to call, or I don't like to call—basic research, because we are so enormously eager about the ocean and atmosphere that we are unable to make value judgments in many important instances.

You have to have a proper balance between implementation and the conduct or the research and processes.

I want to go on with one little comment that arose this morning, about how the relationship works between the Corps of Engineers and

NOAA. That is very simple. Put the Corps of Engineers in NOAA, as Senator Muskie did in his bill.

This whole concept of coastal zone management authority I think is different from these other things we have been talking about, because here we have the necessity to arrange the political machinery for evaluation as between multiple uses, and you cannot do this on the Federal level. You cannot do it on the State level. You cannot do it on a local level. You have to get a mix, so that the political influence of all three of those levels is entered in fully, and this is not easy, because all of these units are made up of people, and people are just impossible to get along with.

One of the things we have quite successfully experimented with in California is this Bay Conservation Development Council. I think if you people will look into that, you will see that there has been a very good pragmatic working operation for the San Francisco Bay area.

There has been an incredible political problem that has been handled quite well, and, in looking over that from our own standpoint in California, while thinking very highly of that, even BCDC agrees that their form of organization is not probably the one for other areas of California, much less other areas of the country.

These have to be tailored for both circumstances and all of the local political influences mitigated, moderated, and integrated into the system, and I think that the idea of a coastal management authority of a single nature with respect to any particular State is not a very good one. In some places it is required that several States be involved.

In California, I am certain we will have to have three or four of these things.

Dr. FYE. Thank you, Dr. Chapman.

Sir, will you give your name?

Mr. ROBERT S. KRUEGER. Robert Krueger. I am from California. I am also a member of the commission of which Mr. Chapman is the chairman.

I just wanted to make one comment regarding a point brought up by Harris Stewart.

He said, and I believe rightly so, that the coastal zone includes the Continental Shelf. This is functionally the definition. The proposed bill, however, would limit the coastal zone to the territorial sea, or the property within the State boundaries, so this would exclude portions of the Continental Shelf. This is also true of Senator Magnuson's bill.

It may be that you would wish to give consideration to an amendment to include certain areas of the Continental Shelf in the coastal zone in some areas, such as California.

Thank you.

Dr. FYE. Thank you, Bud.

I think perhaps we have exhausted our time, Mr. Clingan, and I will turn the session back to you.

Mr. CLINGAN. Thank you, Dr. Fye. I am very grateful to you and to your panel for your comments. The meeting will now adjourn, and we will reconvene here at 2 p.m.

(Whereupon, at 12:30 p.m., the conference adjourned, to reconvene at 2 p.m., the same day.)

## AFTERNOON SESSION

## PANEL 7—FEDERAL ACTION IN THE COASTAL ZONE

## MODERATOR

Dr. W. M. Chapman, California Advisory Commission on Marine and Coastal Resources.

## PANELISTS

Hon. Russell E. Train, Under Secretary, Department of the Interior; Hon. James M. Beggs, Under Secretary, Department of Transportation; Hon. Myron Tribus, Assistant Secretary for Science and Technology, Department of Commerce; Col. William V. McGuinness, U.S. Army Corps of Engineers.

Dr. CHAPMAN. Ladies and gentlemen, as soon as everybody settles down, we will begin.

What we have this afternoon is a lecture by four of the principal people in the principal departments involved with the issues we have been talking about under the title "Federal Action in the Coastal Zone."

We have with us this afternoon Under Secretary Train, of the Department of the Interior; Under Secretary Beggs, of the Department of Transportation; Assistant Secretary Tribus, of the Department of Commerce; and Colonel McGuinness, of the Corps of Engineers.

The way we will run the thing is to go in reverse order with the colonel first, Mr. Tribus second, Mr. Beggs third, and Mr. Train fourth.

We intend to allow ample time for discussion when the four speakers have completed their presentations. If you will make notes as we go along, I think we will have adequate time to get in all the comments and questions that you desire.

Therefore, Colonel McGuinness, if you will be so kind as to lead off, we will start.

### STATEMENT OF COL. WILLIAM V. MCGUINNESS, U.S. ARMY CORPS OF ENGINEERS

Colonel MCGUINNESS. I see our chairman is following a good time-tested Army system, let the junior officer speak first and reveal his ignorance and let the others follow. I will try to do my part.

General Koisch was on your schedule but he couldn't be here today. He is attending a quarterly meeting in Galveston, Tex. at the Coastal Engineering Research Center where we try to bring together our people from different parts of the Nation. Since he is chairing the meeting, he was unable to make adjustments.

The U.S. Army Corps of Engineers appreciates this opportunity to appear before such a representative and important group. We thank Congressman Lennon and the subcommittee he represents for their initiative, and follow-through in arranging this assembly and for their courtesy in inviting us to it.



In my remarks this afternoon I will concentrate on the coastal zone and the Great Lakes, because that is where our marine missions are. These are also the marine areas which most concern you in the States.

#### THE IMPORTANCE OF THE COASTAL ZONE

Our oceanic and Great Lakes coastal areas are uniquely important for a number of reasons which most of you have heard many times, but the most important reason relates to people. People have chosen to live there in great numbers.

The counties of the conterminous United States which touch the oceans or the Great Lakes currently contain only 9 percent of our land, but 41 percent of our people. Looking toward the future, projections indicate that the population and productivity of this peripheral band are growing at a rate faster than the Nation as a whole.

Why is this so?

Some say ports. Others say fishing or industry or esthetics or recreation. Still others lay it to historical inertia and say that the "coastalness" of this band is of little significance to its growth.

Several years ago the Department of Commerce conducted a study of the type and magnitudes of oceanic values implicit in the "coastalness" of this region. Since analyses of this type are certainly a little like adding oranges and grapefruit, most people will not want to take these figures as absolute.

But they can serve as indicators of order of magnitude economic values actually accruing to our Nation in the mid-1960's. There are, of course, many other nonmarket coastal values which cannot be depicted in such a chart. The corps activities relate most prominently to those sectors labeled transportation and recreation; however, to some extent we are active in all these sectors, as are many other Federal agencies.

Whatever the reasons, the logic, the rhetoric, the emotion or the euphemisms—the important thing is that the people have and are voting for the coastal zone by going there and staying there—and that is a type of evidence that really counts.

Our Nation must develop, use and preserve this highly valued strip in a comprehensive, wise manner.

#### THE ENGINEER—PLANNER

The corps role in the coastal zone is primarily that of the engineer, in its broadest sense. Engineers take the discoveries of man and use them to satisfy the wants of man. They are in the middle.

Looking one way, the engineer is a customer of science and makes his demands known by focusing priority on the knowledge gaps which need to be filled.

Looking the other way, the people are his customers. His product has significance only to the extent that it corresponds with their wants. Because of lead times, the general interrelationship of things done now to things done later and many other considerations, the engineer needs to know the people's wants as far in advance as possible.

Thus the alert engineer, the one who really injects his expertise into the social fabric of his time and his Nation, will always be deeply

involved in the future. He projects trends, population, wealth, attitudes and other factors and tries to see the future through them.

He forces himself to respond to the question—what should we be doing now out of consideration for that future? He works with many other disciplines on these problems and when he thinks he has some of the systems worked out, he goes to his customers, the people, and says:

Here's where we think you are going. Here's what we think you want. Here's what we think you are disposed to pay for it in income expended—or in benefits foregone. Now tell us what you think.

And they do, but often with not enough concern. Many do not like this projected future. They sometimes irrationally attack the predictor as the causer. They sometimes loudly clamor for a type of future which they quite refuse to underwrite at the voting booth, in tax assessments or in their individual and collective expenditure patterns.

And so it is back to the drawing board for the engineer. For his new synthesis, he sometimes gets a clear public feedback. More often his approaches, conclusions, and plans evolve as people's awareness of themselves evolves.

#### CORPS COASTAL RESPONSIBILITIES

Corps activities in the coastal zone, following this pattern have evolved as the Nation has grown. In the beginning our national survival was so clearly dependent on the security of the Atlantic and Great Lakes coastlines that the Army Engineers centered on coastal fortifications and problems besetting construction at the land-sea interface.

The dominance of this early coastal engineering theme is reflected in the coastal fortification depicted on the buttons all Engineer officers wear to this day.

This mission soon broadened because some of the earliest acts of Congress involved navigation improvements. Over the years, the corps interest in protecting and improving the use of the coastal zone has expanded as the Congress has added responsibilities.

Today the corps is engaged in a \$200 million annual program of researching, planning, designing, constructing, and maintaining coastal harbors, intracoastal waterways, interoceanic canals, hurricane barriers, and shore and beach stabilization programs. The corps also issues permits for all construction in navigable coastal waters, and we have developed quite a capability to get into the Nation's presence in carrying out this particular function.

Other corps programs, physically located inland, have an important influence on the coastal zone. Inland harbors and waterways feed the coastal ports and form part of the complex waterborne transportation system which moves a substantial part of our interstate and international commerce.

Flood control programs on rivers that discharge into the oceans involve the coastal zone because of the riverine interaction with shore, littoral and tidal processes.

Over the years, the coastal zone missions of the corps have grown ever more sophisticated. Some of the current assignments that particularly illustrate this sophistication are the Atlantic-Pacific Interoceanic Canal Studies, the comprehensive Chesapeake Bay investigation and model study, and the indepth study of San Francisco Bay.

These studies and investigations are Federal-State, multiagency and multidisciplinary. The involved fields include topography, geology, hydrology, meteorology, oceanology, ecology, biology, hydraulics, and economics. The planning of public works in the coastal zone today is not simple, if indeed it ever was.

Increasing sophistication demands increasing research effort and the knowledge gained from research further increases sophistication. The pattern is circular and endless.

The corps is heavily committed in the research area. The Coastal Engineering Research Center and the Waterways Experiment Station are respected worldwide for their contributions to knowledge of the coastal zone. For example, the corps' technical report, "Shore Protection, Planning and Design," is the definitive text on this subject internationally.

Our Great Lakes Research Center is well known and respected by users of the Great Lakes for its continuing research into the problems unique to those great inland waters. Current research is looking into such diverse matters as saline intrusion, energy transfer at the air-water interface, spoil disposal effects, effects of construction activities on the ecology of the coastal zone, ice cover distribution, littoral processes, computer simulation of estuary behavior, wave generation, propagation, and attenuation, dune stabilization, and many others.

Corps navigation activities include the design, construction, operation, and maintenance of deep-draft commercial and fishing harbors, with their appurtenant channels to the sea, shallow-draft recreational harbors of refuge, and intracoastal shallow-draft channels for commercial and recreational craft.

In the interest of navigation, fish and wildlife, natural resources, water quality, recreation, esthetics and the environment, the corps issues permits for structures and for the performance of any construction work in the navigable waters of the United States.

The corps is concerned with aquatic plant control, salinity intrusion control, and major drainage of coastal marshes and swamps. It also removes wrecks which interfere with general navigation and compiles and disseminates information on waterborne commerce and ports.

This is a slide of the corps' hopper dredge, the *Harding*. (Slide shown.) It is one of the larger of 51 corps-owned dredges. Dredging can affect the marine biota, both in the areas where dredging takes place and in the areas where the spoil is deposited. But the intensity duration and areal extent of the effect require continued study. Two major studies are in progress.

One involves determination of the biological effects of the deposition of dredgings, sewer sludge and acid waste in New York Bight. The corps, under its congressional authorization to regulate certain activities in navigable waters, is responsible for issuing dumping permits.

In a second study the corps with the valuable participation of FWPCA and other agencies inside and outside of Interior, has nearly concluded an \$8 million, 2-year pilot study of dredging operations in the Great Lakes. This study, of course, is but one aspect of the overall requirement to look at the Great Lakes region in a truly comprehensive way.

For example, the problem of eutrophication in Lake Erie cannot be



looked at solely from the point of view of pollution treatment, or lake currents, or levels, or agricultural production in the basin, or shoreline erosion, or any one of many other important interrelated factors.

Any overall solution to the problems of Lake Erie must be set in the context of the total environment aspirations of the people of this region tempered by a reliable understanding of alternative choice patterns. By "total environment" I mean placing man in the center and including preservation and enhancement of all of those market and non-market values which man needs to grow in both body and in spirit.

The corps has an interest in offshore construction because some of this construction is accomplished by the corps, because offshore construction by others is subject to the corps permit authority, and finally because offshore construction may affect bottom and shore conditions.

The Waterways Experiment Station is currently making an intensive state-of-the-art survey of submarine soil mechanics so as to remain abreast in this growing field. The Coastal Engineering Research Center is studying a program to define engineering problems involved in offshore construction.

The next two slides show Seaside Park, Conn., before and after a beach restoration project.

(Slides shown.)

Shore protection lessons learned in 40 years of construction experience and research are incorporated in numerous technical publications by the Coastal Engineering Research Center. These publications enjoy national and international acceptance. Some general conclusions are that such traditional solutions as seawalls may protect shorefront structures, but they result in accelerated erosion of the beaches; that groins may protect a short stretch of beach at the cost of accelerated erosion of a downdrift beach; and that probably the best solution for protecting eroding beaches is to nourish them artificially with sand while at the same time using vegetation and snow-fences to trap wind-borne sand, thereby creating protective dunes.

This slide shows such a dune at Wrightsville Beach, N.C. (Slide shown.) This slide shows a fixed dredge bypassing sand across Lake Worth Inlet, Fla. (Slide shown.) This process prevents loss of sand out into deep water and shoaling in the inlet and it insures nourishment of the downdrift beach. The corps is now conducting an inventory of offshore sand deposits with the idea that this sand may be used for beach nourishment.

The corps is now determining the methodology to be used for a national inventory of our shorelines. The National Shoreline Study, directed by Congress, will be the first comprehensive examination of the condition of our 90,000 mile shoreline. It will be the basis for programs to protect those portions that are in the most urgent need of such protection.

The corps' efforts in hurricane flood protection are hindered by the massive costs associated with flood protection structures. Storm surges that may range up to 20 feet above normal high water, as in Camille, require high dikes along the coasts and on the banks of tidal waterways.

In some cases, as in Providence, R.I., and New Bedford, Mass., it has been feasible to build coastal structures across the tidal waterways.

This is Providence, during the 1938 hurricane which killed 250 peo-

ple. (Slide shown.) This is the hurricane control structure across Providence River at Fox Point.

I have touched on several major corps coastal activities. In the interest of time, I will not discuss other corps coastal responsibilities such as mapping and charting on the Great Lakes, ecological activities, regional planning, and recreation.

#### RELATIONS WITH THE STATES

But in the remaining time, I would like to make two broad comments concerning our relations with the States:

First, we feel that the problems of the coastal zone of the United States involves a multiplicity and diversity of significant resource, urban, economic, environmental and other people-oriented considerations. We do not foresee the possibility that any one agency or any single level of government could have the breadth and depth of knowledge or be given the authority necessary to take satisfactorily into account the many factors that need to be considered.

We are strong advocates of the team approach. In such an approach, the expertise of a number of Federal agencies and the affected States is brought together regionally to project future multipurpose needs. This is done in a way which recognizes that any full consideration of the coast is of questionable adequacy if it does not simultaneously consider the rivers and other inland areas to which the coast is so inseparably interrelated.

This is why we are strong advocates of comprehensive, regional, Federal-State, water and related land resources planning whether it be through the Water Resources Council or through separate studies such as those on Chesapeake Bay and San Francisco Bay.

Secondly, we hope for a greatly increased State role in coastal zone matters. To participate in coastal zone decisions to the extent that their responsibilities and interests and authorities require, the States need Federal support. Through the planning grants of the Water Resources Council and through strong support of additional grant funds proposed by the administration, we hope that State capabilities will grow.

It is most important to us that this happen. We do not relish being always in between the preservationist and the developer on coastal permits. We also want a strong, balanced and constructive review by the States of corps projects being considered within their borders. We want the States to exercise an ever-increasing knowledge and judgment over their coastal zones.

In summary, I have given you some of our views on the importance of the coastal zone, the role of the engineer-planner as we see it, the historical evolution of the corps' current role, the scope and variety of some of our major coastal missions and some of our thoughts on the importance of achieving increased State capabilities in coastal zone affairs.

Dr. CHAPMAN. For those who are interested, there are some copies of this presentation available on the table, as you go out or after the presentation. Thank you very much.

Thank you very much, Colonel. We appreciate very much your full presentation of the corps activities and this aspect of your work.

We will now hear from the Honorable Myron Tribus, Assistant Secretary for Science and Technology, Department of Commerce.

**STATEMENT OF HON. MYRON TRIBUS, ASSISTANT SECRETARY FOR  
SCIENCE AND TECHNOLOGY, DEPARTMENT OF COMMERCE**

Mr. TRIBUS. Thank you, Mr. Chairman. Ladies and gentlemen, I am pleased to present the Department of Commerce views on coastal zone management. Throughout this conference it has been emphasized time and time again that in order to avoid mutually destructive competing uses of the coastal zone there is a need for a national legislative policy.

For example, two of our Nation's most important goals in this area are (1) the maximum economic utilization of the coastal zone, and (2) the preservation of the natural environment of the coastal zone. Obviously these are competing and contradictory goals. The attainment of either of these goals to the serious detriment of the other would be unacceptable to the public interest. We, therefore, must strive to achieve a meaningful optimization of the coastal zone to meet these goals.

In order for decisionmakers to achieve this balance they must first have available adequate comprehensive physical and socioeconomic data. Once these the data have been provided, they must devise a plan for the management of the coastal zone that will give appropriate recognition to competing uses, such uses as industrial development, recreation, conservation, transportation requirements, labor utilization, and housing, and their effect on the quality of the environment and the ecology.

Any plan for the development and management of the coastal zone will require the simultaneous consideration of economic, political, social, technical and scientific factors. I visualize that for every natural system there could be need for a laboratory, a staff of investigators and a dynamic computer model of the zone.

With support from a data base such as this, and a computer model, it should be possible to forecast the effects of different management policies and provide a better basis for decisionmaking.

I will now discuss briefly what the Department of Commerce has been doing that relates directly to coastal zone management.

The Department's Environmental Science Service Administration (ESSA) is active in the coastal zone, gathering, processing, analyzing, and disseminating environmental data. These data include information on coastal tides, movement of ocean currents, structure and shape of bordering ocean basins, seismic activity and climatic study of the area.

Further, ESSA's Coast and Geodetic Survey provides the charts necessary for navigation of this area and the determination of marine boundaries. It also conducts the surveys, investigations, analyses and research in hydrography, oceanography, cartography, geodesy, and seismology which are necessary in any planning efforts involving the area.

ESSA's Weather Bureau plays a vital role in the preservation of life and property in the coastal zone by providing the river and flood forecasting and warning systems. As the events of the past 2 months have demonstrated, ESSA's hurricane warning system is useful to the coastal zone. In connection with this role, research and analysis of hydrometeorological data is performed for application to the zone.



The capabilities of the National Bureau of Standards in developing and calibrating instruments for scientific and engineering needs could be especially useful for development of marine instruments needed in the coastal zone. The Bureau also has a strong competence in systems analysis through its technical analysis group which would be vital in planning and carrying through a national coastal zone program.

The Office of Business Economics (OBE) has developed a program of measurement, analysis and projection of regional economic activity covering the entire United States. The analyses and data generated by this program are available to both Federal and State agencies involved in planning for the development and use of the coastal zone.

OBE can serve also as a basis for estimating future requirements in various economic sectors; for calculating benefits and costs to determine the economic value of a given program; and by providing an economic framework in which the advantages of alternative economic programs can be evaluated and the economic utilization of the coastal zone optimized.

This activity provides a comprehensive, uniform economic base for use in regional economic planning. It is used in water resource development, regional commission planning and other economic developmental efforts. As an example, the Office of Business Economics' regional economic program is being used extensively in the Estuarine Study under way in the Federal Water Pollution Control Administration.

The Department's Economic Development Administration (EDA) has been active in many parts of the Coastal Zone through planning and use of its grants and loans. This assistance is made available through four main programs: Public Works Grants and Loans, Business Loans, Technical Assistance and Job Retraining.

EDA has approved coastal zone projects from St. Mary's in Alaska around the coasts to Maine and along the shores of the Great Lakes from Minnesota to New York. About 340 projects have been approved in areas bordering our shorelines. These projects include primarily port improvements, industrial parks, utilities, roads, and recreation facilities. Since 1965 EDA has financed more than \$113 million in grants and \$53 million in loans for these activities.

Economic Development Districts formed around eligible countries are used to further the aims of the Public Works and Economic Development Act of 1965. At present there are 121 of these districts: 21 of which are located in and operate the Coast Plan Zone.

The EDA has also given assistance in the formation of six economic development regions, three of which are directly related to coastal zone development. The three are the Upper Great Lakes, New England, and Coastal Plains Regions.

The Business and Defense Services Administration (BDSA), turning to one more of our bureaus, is working closely with other Federal and State agencies having coastal zone responsibilities to provide assessments of usage and long-term requirements of industrial water.

BDSA will be providing national and regional studies to advance national growth, regional development, and environmental quality objectives. These evaluations and forecasts are used by the river basin commissions and committees, the Water Resources Council, and others

to plan national, regional, and local water resources development projects.

Of course, the Department's Maritime Administration (MarAd) has promoted the development of our ports and related transportation facilities to include investigating the coastal zone tributary to ports, advising and assisting communities in port improvement and location and studying congestion of commerce at ports where land and water modes of transportation interface. MarAd cooperates with all other Federal agencies in all coastal zone management questions, supplying its expertise where needed.

All of these agencies have participated extensively in the Estuarine Studies that are being undertaken in accordance with the Water Pollution Control Act. There is a separate Estuarine Study on the Chesapeake Bay, and there are other major studies concerning this Nation's estuaries. These are separate and significant parts of the coastal zone that have unique complex problems.

In most cases, the agencies have not only supplied basic information, analyses and forecasts, but they have also met with the working groups to discuss the problems and to help seek solutions.

Since the Federal Interagency River Basin Committee was established in the early 1940's, the Department of Commerce and its constituent agencies have participated in the planning of water resources development that has been taking place throughout the country.

The water resources planning in the field has been on a river basis with field personnel organized into work groups and study groups to develop plans and programs to meet estimated water requirements. The personnel has included employees from Federal agencies and State governments with coordination under a joint coordinating committee of Governors and regional heads of Federal departments. The River Basin Studies and reviews have covered areas from headwaters to the sea and, accordingly, coastal areas have always been part of the consideration and study.

With the establishment of the Water Resources Council under the Water Resources Planning Act of 1965, the Department of Commerce has been an associate member and provided considerable participation at the meetings at all levels, from the Council itself, which is made up of Secretaries of Departments, through the Council of Representatives and the many committees that operate in Washington.

The Department of Commerce also participates with full membership on the River Basin Commissions that have been established under the Water Resources Planning Act with a Secretarial designation for Commerce member. Commerce also has membership on the long-established river basin committees which also include the Governors.

With this recitation of the Department of Commerce participation in these problems which relate to coastal zone management as a background, I would like now to comment on the Federal Government's role in future national directions in the coastal zones.

One of the salient facts about our developing society is that fewer and fewer of us live in a natural environment, and more and more of us live in an environment which is largely man-made. Probably 80 out of every 100 people in this country are dependent on systems which

are man-planned, man-designed, man-made and dependent on men for operation, maintenance and improvement.

Furthermore, this percentage is increasing and the degree of our dependence on technology is increasing as the complexity of products and systems necessary to life removes us farther from nature.

Man's relatively new found ability to control his environment has not always been used to his best advantage. For example, our solution to the design transportation problem created a transportation system which kills 50,000 people per year and contributes in making the air of our cities unfit to breathe.

Further, our design solution to mass production was a factory system which adds to air pollution, dumps millions of tons of noxious by-products into our lakes and streams and makes no satisfactory provisions for handling scrap and wornout products.

The utilization of the coastal zone presents man with yet another opportunity to design a solution to a pressing problem. I hope that we will be able to create a design that this time will stand the test of time.

The goal in coastal zone, as it is everywhere, is to achieve a solution which will satisfy the socio-economic needs of this zone while protecting the ecology of the area from permanent damage. This requires that all planning for development and management of areas within or containing segments of the coastal zone must be comprehensive if they are to assure optimum use of resources for all purposes.

Goals, priorities, and guidelines must be established. Problems in each region must be identified and a framework constructed within which a solution can be developed. The State and local authorities are most familiar with their problems and form the logical planning points. There must, however, be coordination with the Federal Government as various Federal agencies have programs and activities involving the coastal zone.

I envision the role of science and technology as assembling the basic data which now exists and analyzing these data so that the decision-makers may create an appropriate design for any coastal zone management.

For example, in formulating a plan ESSA might be called upon to assist a national effort to chart the lateral seaward boundaries between the States. Further, data on water budget, estuarine circulation, ecosystems, coastal currents and other pertinent parameters of the coastal zone will certainly be needed.

As announced by the Vice President on October 19, the administration plans to submit a legislative proposal to the Congress to establish policy objectives for the coastal areas and to authorize Federal grants, with matching State contributions, that will encourage and facilitate the establishment of management authorities.

Such legislation should assist in insuring that rapid coastal development does not destroy limited coastal land and water resources and that all interests in the coastal regions would be assured consideration—for port development, navigation, commercial fishing, mineral exploitation, recreation, conservation, industrial development, housing, power generation, and waste disposal.

In conclusion, I would like to reemphasize my belief that man now stands on the threshold of designing a comprehensive, long-range solu-



tion to meet the socioeconomic needs of the coastal zone while preserving its ecology and the quality of the environment. Our actions in this area today will undoubtedly be difficult to reverse and will have a long-term future impact.

Thank you.

Dr. CHAPMAN. Thank you, Mr. Tribus, for a very interesting statement.

On the matter about transportation, perhaps we will have some comment from our next speaker later, but at this halfway point in our afternoon program, I would like to pay a tribute to our two speakers so far. When I come to Washington, D.C. as I frequently do, to serve on committees and stay up half the night, I like to have a little nap in the afternoon. I have been appreciative of the fact that I have seen only two or three nodding heads.

Mr. Beggs, will you be so kind as to go ahead.

#### STATEMENT OF HON. JAMES M. BEGGS, UNDER SECRETARY, DEPARTMENT OF TRANSPORTATION

Mr. BEGGS. Thank you, Mr. Chairman.

Ladies and gentlemen, the Department of Transportation appreciates the opportunity to join this Conference today and to discuss some of the problems that relate to transportation and coastal zone management.

I will try today to cover briefly the various ways in which the Department of Transportation is concerned about the uses of the Nation's coastal zone. These concerns stem not simply from the many programs administered by the Secretary of Transportation but, to a significant degree, from the Secretary's role as the President's principal adviser on the whole spectrum of national transportation policies.

Transportation, of course, is one of the major users of the Nation's coastal zone. Whether it be ports and harbor facilities—or highways, railroads, airports, or pipelines—transportation is a competing claimant on the zone.

There are no exact figures available, but it is well known that highways, with their associated bridges and other appurtenances, require thousands of acres of land that lies within the coastal zone. So, too, do railroads and airports. Kennedy and LaGuardia Airports in New York, Logan Airport in Boston, the San Francisco International Airport, and Washington National Airport are actually built on lands partly reclaimed from the water.

These are but a few examples, but they help document my belief that, in thinking about the relationship between transportation and the coastal zone, too often we think of it in terms only of ports, harbor facilities, and seagoing vessels.

We must be equally concerned with the other aspects of transportation, for they also represent large claimants on the physical space lying within the zone—space that can be used for myriad other purposes, ranging from wildlife preserves, to recreation, to housing, or to general industrial development.

In looking to the future and assessing transportation trends, it is clear that the transportation demands on the coastal zone are certain to become greater. International cargo movement alone, by sea and by air,

is projected to increase even more in the next decade than domestic goods movement.

This will require not just new or improved port facilities designed to handle container traffic, but it will also necessitate more airport air cargo facilities, new or expanded railroad freight handling investment, and additional airways. All of this means that transportation, just as with virtually every other segment of our economic and social life, will be imposing new demands on the scarce space that lies within the coastal zone.

Although I have stressed the breadth of transportation's involvement in the zone, let me now give closer attention to several of the Department's programs that bear directly, in an operational sense, on the uses of the Nation's coastal areas.

The Coast Guard has been engaged in the detecting and reporting of violations of the Oil Pollution Act of 1924 since its enactment, and has worked cooperatively with the Corps of Engineers in the enforcement of the other applicable pollution statutes.

Under the provisions of the national multiagency oil and hazardous materials pollution contingency plan of September 1968, Coast Guard forces are involved in surveillance activities and in most areas provide on-scene commanders to carry out pollution control measures in the case of spills of oil or other material. This activity is, of course, nationwide.

The availability of our communications network and rescue coordination centers on a 24-hour-a-day basis is a most important part of our contribution.

As you know, the House has passed H.R. 4148, which would repeal the Oil Pollution Act of 1924 and substitute therefor a much more comprehensive antipollution program. The Senate has also passed H.R. 4148 in an amended form. It appears likely, therefore, that we may have by the end of this session of Congress a more effective law on the books.

The Coast Guard would play a very substantial role under that law in regulating and enforcing control of sewage from vessels, policing violations of oil discharge regulations, and directing cleanups of oil spills or spills of other hazardous materials.

Through the Coast Guard, the Department is also directly concerned with the transportation of hazardous materials. These represent a potential, not only for ecological injury, but for serious, even cataclysmic damage to our ports and waterways.

New commodities, the properties of which are not fully understood, are being manufactured and shipped in increasing quantities. Bulk carriage of these materials by water, particularly on the river systems and the intracoastal waterways, is increasing.

These hazardous materials in very large containers pass through many of our highly populated communities with little or no awareness on the part of the authorities of the potential risks involved. The Coast Guard has undertaken to assure the containment of the cargo in the vessel or barge and the container, even under adverse conditions, by regulation, inspection, and enforcement of standards.

The Coast Guard has also established a pilot hazardous materials advisory center in Houston whose functions include collecting information concerning the known physical characteristics of these materials,

appropriate handling practices, and pertinent casualty control measures.

This data is disseminated to the watermen and others involved in transporting the materials. The center is telephonically available on a 24-hour-a-day basis for additional information.

In the coastal zone, the increasing concentration of marine traffic has heightened the collision risks, which could in some cases involve substantial spillage of oil or other deleterious material. Accordingly, the Coast Guard has developed and placed into effect a number of traffic separation schemes off major ports wherein separate one-way lanes are provided.

These schemes have been established through the joint efforts of the private sector, port authorities, and interested Government agencies. These are not mandatory, but are in the nature of recommendations. We hope that this method will prove satisfactory.

Attempts to impose mandatory control measures on vessels would not only entail a major change in our domestic legislation but would require international agreement as well. We intend to monitor the efficacy of these schemes very closely. At the same time, of course, we are actively pursuing new and better methods of aiding navigation, with particular attention upon the coastal zone.

The Coast Guard has also been active in antipollution activities on the Great Lakes. Every major cutter and nearly all of the shore stations have been involved at one time or another in activities related to limnological and pollution abatement research.

Our contribution has been in the form of providing the necessary facilities for scientific and technical personnel from Federal agencies, State agencies, and university laboratories to obtain data and monitor natural processes.

Turning to the other side of the coin, how do transportation activities affect the coastal zone and what is the role of the Department in attempting to minimize those effects? Perhaps the best example is the recently well-published problem of the Everglades and the proposed new jetport.

Without going into all of the details as to how that problem arose and how it is being solved, the Everglades situation demonstrates why the Federal, State, and local governments must work closely together in developing public facilities in recognition of their potential environmental impact.

It is also a good case in point as to how we within the Federal Government have to work together to assure that all aspects of major public works projects are fully evaluated.

Another example of transportation impact is the Federal highway program. Highways can have a significant effect on the coastal zone in two ways: (1) By opening up new coastal areas and encouraging their development, and (2) by the construction itself, which, through silting or changes in drainage, can change the ecology of a particular area.

The coastal zone, of course, also includes the ports where the typical waterfront industrial complex occupies some of the most valuable land in the city. Changes in shipping and port operations have led to making these areas the most unattractive and rundown sections of the city. Abandoned piers, warehouses, and hulks cluttering the waterfront contribute to the general impression of decay and untidiness.



Urban renewal and the recognition of potential benefits in planned use of waterfront property is necessary for corrective action and requires interagency action. The Department of Transportation through the Coast Guard, Railroad Administration, Urban Mass Transportation Administration, and the Highway Administration is directly concerned with this area of major interface between transportation modes.

The Arctic is a developing area of major concern to the Department of Transportation as well as to other Federal agencies. The petroleum discoveries in the Prudhoe Bay and the achievement of the "Manhattan" in transiting the Northwest Passage have focused attention on the resource potential of the Arctic and sub-Arctic portion of the United States.

The State of Alaska has a very large proportion of our coastal zone, most of which is as yet untarnished by the hand of man. Here we have an excellent opportunity to take advantage of the many errors that we have made in the "Lower Forty-Eight." It is clear that Alaska has a tremendous potential which will be exploited.

What we must do is assure that the exploitation is wisely planned and carried out. In the Department of Transportation we have made a number of studies concerning various aspects of the matter because transportation is the key to Alaskan development.

We have worked closely with other agencies on these studies and will continue to do so in the future. We are exploring the concept of transportation corridors in order to minimize adverse impacts on the ecology. We are exploring alternative transportation modes seeking a balanced and effective mix.

We are examining the problems involved in the establishment of ports where none have existed before. It is obvious that the other uses of the coastal zone must be taken into account in the development of Alaska, and having a clean slate to work on, the opportunity is present now to do a good job of it.

In directing the Department to coordinate and promote transportation development in the United States, the Congress was not unmindful of the need to develop transportation in a manner consistent with environmental considerations. For example, section 4(f) of the Department of Transportation Act declares it to be the national policy that "special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

In line with this responsibility, Secretary Volpe has established within the Department the Office of the Assistant Secretary for Environment and Urban Systems. It is the responsibility of that office, among other things, to assure that procedures are established for the systematic consideration of the environmental aspects of all transportation activities carried out within the Department.

While the Department can influence the direction of transportation development to take account of environmental considerations, its influence is definitely limited. Much transportation development is either undertaken privately or at the initiative of State or local Governmental agencies, in some cases with a relatively small amount of Federal assistance.

While all of the Federal aid programs administered by the Depart-

ment require that transportation projects be consistent with local planning, it is up to the local planning bodies to assure that the transportation development included in their plans is consistent with broader environmental considerations.

Needless to say, we have a long way to go in State and local planning in this regard.

In our view, there is certainly a need for a national policy on the coastal zone. We need to develop national goals and policies for the multiple use, development, and conservation of the coastal zone, which is a valuable but threatened and diminishing national resource. Such national guidance is essential to effective planning by State and local agencies.

The program recently announced by the Vice President is intended to meet this need. Under that proposal, grants would be made for the initial development by the States of planning and regulatory mechanisms and for the operation of the State management systems that are developed.

The Department has had some experience in this type of joint Federal/State activity. While I am convinced that it can work, we should be under no illusions. It will take hard work on the part of all concerned to make it work well.

In summary, I think the answer to the problem of coastal zone management lies in a clear understanding on the part of the public that mankind can no longer afford to be profligate in its expenditure of natural resources. We have done an incredible amount of damage to our environment and, in some cases, it is questionable whether we can reverse the process of decay even if we try. In most cases, however, it is not too late to reverse the trend.

I think the interest and activity as demonstrated by today's conference, and the actions of the administration to develop a long-term program as announced 10 days ago, are the best evidence that the public has become aware of the problem. The need now is to follow through in an effective way.

Thank you very much.

Dr. CHAPMAN. Thank you very much.

The next speaker will be the Honorable Russell Train, Under Secretary of the Department of the Interior.

#### STATEMENT OF HON. RUSSELL E. TRAIN, UNDER SECRETARY OF THE DEPARTMENT OF THE INTERIOR

Mr. TRAIN. I am delighted to be present at this gathering this afternoon of State and local representatives from all over our country concerned with improving management of our estuarine and coastal areas.

I cannot help but comment that all four of our departments, as you can gather, are very much involved, at times at least, with the same problems. We overlap; we interact. I know our own Department is very much involved with the Everglades Jet Port, with the Alaskan pipeline, dredge and fill permits, and so forth.

The only point I am trying to make here is that I think that this fact of interrelationship points up one of the really very significant challenges that we all have today in the Federal Government, State,

and local governments—to design institutional mechanisms that make these separate agencies work together in some effective way to carry out public policy that we all want.

I am sure that all of you are just as well aware as I am that our estuarine and coastal zones are a vital natural resource, and that as rich as they are in resources for man and nature, they are equally sensitive and vulnerable to the damaging side effects of man's and nature's activities.

Our coastal zone will have tremendous importance to the future of this country. The coastal environment is a breeding or nursery ground for most of our marine commercial and sport fisheries. It is the location of most of our marine oil and gas and other mining activities.

Except for our lakes and inland waters, it is the place where the aquatic environment is most threatened by man's activities. It is a recreational area of rapidly growing importance. It is the place from which most of our growing needs for water must be met. It is the arena in which our ability to cope with conflicting interests and uses of the environment will receive a major test. The future welfare of our Nation makes it imperative that we resolve the complex problems of the coastal zone.

As the economic value of the estuarine zone rises, and population pressures increase, the conflicting and competing uses of these areas cannot help but increase in terms of continuously greater pressures for housing and commercial sites, for marinas and harbors, for more and larger power plants, and for deeper channels.

The need for recreation itself in the estuarine and coastal zone grows by leaps and bounds, but the open space for it does not.

My associate from the Department of Commerce mentioned that economic development and the protection of natural values of the coastal zone are or tend to be inconsistent with one another. I would like to comment, and not necessarily to take exception with that remark, but to point up, I think, a very real aspect of the matter.

That is to suggest that the supposed economic benefits are often, in fact, illusory or short term, and that the loss of natural areas or the disturbance of natural functioning often has very real economic costs, although sometimes they are not readily apparent, and sometimes rather long range, but nonetheless they are very real.

I think all I want to suggest here is that in measuring economic benefits or weighing economic benefits in development programs we should be careful to utilize an economic measurement that more truly accounts for the kind of long-range course of benefits than are usually found in a typical GNP measurement.

The fact is that present planning and development now proceeds on a piecemeal basis, with unplanned and unregulated modification of the estuarine and coastal zone. As a result, incompatible uses of the coastal areas often are developing adjacent to each other.

We are in danger of allowing unfortunate destruction of fish and wildlife resources and the habitat on which they depend. We are losing forever the opportunity to set aside areas for recreational use, and we are permitting unnecessary damage to scenic areas and aesthetic qualities generally. There is obviously need for action.

What is needed to combat the above situation, I feel, is to put into



effect a comprehensive national program for wise management of the coastal zone of the Nation, involving Federal, State, and local governments, and public and private interests in an appropriate manner. Its aim should be to permit the optimum use of this vital resource by recognizing the existence of competing uses and accommodating them through appropriate management, and further, to conserve these resources in such a manner as to keep open the options for various uses in the future and not foreclose them.

This management system should recognize the primary role of the States in managing their resources, as well as the role of the Federal Government in protecting the wider national interest.

I cannot in such a brief period develop the overall implementation of such a program. It should contain at least the following elements:

- A national policy.

- Legislative authorization to carry out the program's functions.

- Development of the basic knowledge necessary for effective management.

- Provisions for comprehensive planning and implementation.

- Active administration in terms of regulation, control, and coordination.

- Financial and manpower resources.

- Public awareness and acceptance.

The States have primary authority in the control and use of their coastal resources. Therefore, there is little doubt that they must play the key roles in any management program. The proper role for the Federal Government is, in my judgment, primarily to provide initiative, guidance, and support to the States in managing these resources.

By virtue of the numerous activities of the bureaus and offices in the Department of the Interior, the Department already has a deep involvement in efforts to achieve wise management of the estuarine and coastal zone. Interior's programs are planned and managed to meet expanding national needs for material, esthetic, and environmental resources and qualities afforded by the estuarine and coastal areas.

The Department of the Interior is the major civilian agency in oceanic affairs. A conservative estimate of our budget for marine programs is about \$80 to \$100 million, which is 35 to 40 percent of the total civilian budget for oceanography.

If seashore land acquisition for public recreation is included, and we add also all activities of the Water Pollution Control Administration that relate in any way to the marine environment, the Department's total marine resources budget is at least twice the amount quoted. More than a dozen bureaus and offices in the Department have marine resource responsibilities.

These very broad and diverse responsibilities require close coordination. Differences can arise between commercial and sport fisheries. Development of marine oil and gas resources, if not carefully planned and managed, can create conflicts with fisheries and recreation, and, I might add, even sometimes when carefully planned and managed.

Water pollution threatens other uses of the marine environment. Interior's experience in resolving such conflicts, and in coordinating its diverse interests in the environment, has made this Department especially qualified to resolve resource-use conflicts. We are learning

to anticipate the problems so that measures can be taken in advance to alleviate them.

We have had a long and successful record of cooperation with other Federal agencies, the States, universities, industry, and public groups. Our relationships with the Navy and the State Department have been especially close. The Department of Transportation, through the Coast Guard, has been extremely helpful in monitoring fishing operations off our coast and in enforcing fishery regulations.

The Department of Commerce and the Department of the Interior have many joint marine programs which reinforce the capabilities of both agencies. We cooperate with NASA, AEC, NSF, Smithsonian Institution, and other specialized Federal agencies and maintain close working relations with the States as well. Altogether, Interior has been a leader in marine affairs and interagency cooperation for many years.

Turning to the specifics of the report of the Commission on Marine Science, Engineering and Resources, the organizational recommendations in chapter 7 have attracted widespread attention. The Commission report abounds with references to the National Oceanographic and Atmospheric Agency (NOAA), as if the Commission had, in fact, decided that creation of a new agency was imperative.

Actually, Dr. Stratton has said several times that the Commission recognized that the responsibility for civilian ocean affairs might be delegated to an existing agency, but that this solution would require major reorganization, and that reorganization of any existing agency which had statutory responsibility for nonmarine matters was beyond the terms of reference of the commission.

I think it will be wise to consider whether a new agency is really necessary. To us it appears to separate resource programs which had better be grouped together. If this Nation is to be successful in solving the complex problems of the environment, it should take the total environmental approach in its programs and in its organization, and not separate the ocean and the atmosphere from the land and fresh waters.

In summary, I know I do not need to repeat my own concern for management of our coastal areas. I am equally sure that all of you fully share that concern. Development and implementation of sound programs for management of these pressure resources will require a long period of devoted work. I hope that this program in Washington will spur you on in undertaking that work and in achieving successful results which are so important to the future of this country.

Thank you very much.

Dr. CHAPMAN. Thank you very much, Mr. Train, for a very interesting presentation.

What we are now going to do is open the floor to questions and comments, hoping to have enough time to handle everybody. There is a picture that will be shown when we complete our session this afternoon for those hardy souls who still wish to participate, but I would much rather have an active and lively discussion this afternoon than see moving pictures myself.

We will now entertain any comments or questions from the floor, but before doing so, I have a comment or two to make myself.

As a good many of you know, I spend about a third of my time on

the State level in California, and about a third on the national level in various advisory capacities around town, and about a third of the time working with international agencies on ocean research.

As a consequence, I see a rather board cut of what goes on. I am not very pleased about the effect of the U.S. activities in respect of the ocean and its use. Our commercial fisheries have stayed approximately static for a little over 30 years. Our merchant marine has deteriorated sharply. It can't be kept alive without heavy subsidies.

Our environment, as Mr. Train said, and which I can vouch for, is going to pot rapidly, more rapidly than we are learning how to take care of it. Our fisheries have decreased not only from bad economic treatment, but also from overfishing, bad management practices, or lack thereof.

I particularly do a good deal of work with Russian colleagues in ocean research and fishery development fields. It is somewhat irritating to me to see the Russians moving ahead so vigorously in all aspects of the use of the sea. They passed us a long time ago in fisheries. They are passing us presently in merchant marine.

While we are laying up our new research vessels, they are launching new ones, better than the ones we are laying up. Their environmental sciences are going ahead more rapidly than ours, in my opinion. The Russian Navy seems to be moving ahead fairly accurately.

I just don't like the posture of the United States in respect to the ocean. I think we are doing poorly at home and poorly abroad. I think one of the reasons for this is that we depend upon the executive branch of the U.S. Government for a great deal of our stimulation, guidance, and so forth, and we get very little in the ocean field.

First off, we don't get any money. The taxes go to the Federal Government, but we don't get very much back in handling our ocean responsibilities. The Bureau of the Budget has been notably reluctant to let any money out in this field. There has been a flat level for 4 years, no matter what the propaganda says, in ocean research, and we are not getting any better.

The token statement the other day of the Vice President didn't make me happy at all. Included in this for the funding for the International Decade of Ocean Exploration was the U.S. funding, and it is being funded at a much lower level than the scientists who were asked to direct the program said was possible.

There is no program or laboratory in the United States that is not starved for money. As I say, we are laying up research vessels. Our programs are floundering. The young people we have educated are looking for other employment opportunities after we have trained them.

So I am not happy with all this business. I would like to entertain some comments from the audience.

Dr. Knauss?

DR. KNAUSS. You have indicated that the President and Vice President accepted one part of the Stratton Commission report with respect to encouraging the States to establish coastal programs. There was another part of that recommendation which indicated there should be a single Federal agency that should be the interface for these coastal management authorities.

It was indicated there were something like 24 Federal committees



and agencies that are involved in the coastal zone. It was indicated that this single Federal agency should have responsibility for review by giving the grants or withholding the grants and, therefore, try to exercise some aspects of the national interest; that this agency "should assist the coastal zone authority in resolving problems resulting from divergent objectives of other Federal agencies, and that this single agency should be responsible for the planning and coordination of Federal activity in the coastal zone outside the State jurisdiction."

I am wondering if any of you would be willing to discuss the other aspects of this, whether or not there is a need or necessity of having a single agency in Washington that would interact and to do the other things that were recommended by the Commission. I address that question to all four of you.

Mr. TRAIN. I am sure everybody is going to want to say something.

It seems to me that we definitely need one single lead agency, but just offhand it would strike me as being impractical to think in terms of one Federal coastal zone authority that would comprise within its organization and functions all coastal zone activities of the Federal Government. I just don't think it is feasible.

I would say there should be a lead agency located somewhere in the Federal Government that would have the responsibility for administering this program, and with a responsibility for bringing some kind of coordination to the activities of the agencies which lie outside of its actual organization.

Does that address itself to the question, Dr. Knauss?

Dr. KNAUSS. We didn't assume that there would be one agency that would exercise all the activity. What we suggested was that there should be one agency which acted as interface in resolving problems.

I think, for example, we heard today that Texas has, in fact, begun to get its house together by actually putting together something like a coastal zone authority. In that connection, I believe the Governor has written to Secretary Hickel asking him if he can delegate one person in Interior with whom he can deal on these problems, because there are so many agencies within Interior.

The question is whether or not there should be a single agency that would have the responsibility; and also a single agency that would be responsible for the problems of development, planning, and coordination of other Federal activities. No one has suggested that there should be one agency that does all the work.

Mr. TRAIN. Let me hasten to say I know of the letter from the Governor, and the Secretary has answered the letter. He has designated the Office of Marine Resources as the contact point within the Department, at least for the present.

I will give somebody else a chance to take a stab at this.

Dr. CHAPMAN. Colonel McGuinness?

Colonel MCGUINNESS. The question, I think, addresses itself to the very much repeated statement that Federal and non-Federal people, upon looking at what is happening in the coastal zone, have identified 22 or more Federal agencies working in there, and it has become very to find all Federal agencies exercising their functional roles in this area.

The coastal zone is a geographic concept. I would submit to you that if you would want to draw a circle around the desert zone, the moun-

tain zone, the Southeastern States, or what have you, you should expect to find all Federal agencies exercising their functional roles in this area.

The identification of interfaces and the need for coordination does not necessarily carry with it the conviction that these problems should be resolved by changing basic functions. It may carry with it the conviction that these interfaces are important enough and you need a basis of coordination. You have to then ask, are there coordinating devices around? Are they adequate for the job?

If we are going to make them more adequate, give them more authority. At the State level, I think most people would say that the Delaware-type commission certainly has more authority to get things done than the River Basin Planning Commission, but it also requires a certain amount of sovereignty and tying of many, many pieces together in a different, unconventional way. It creates tremendous problems in organization, or it could create them.

So the question is not an easy one to answer. I would answer it this way: If, indeed, the interrelationships in any geographical part of the country are important enough to put in geographic schemes superimposed upon a functional organization, then the answer is yes. But you have to consider the implications of that question.

Thank you.

Dr. CHAPMAN. I would like to comment on this before asking for another volunteer.

One of the more vigorous aspects of U.S. industry is that if a division or activity is not making a profit, not working very well, it gets reorganized, just on the general principle of "Shake the boys up, change them around, something better might happen."

This goes on time and again. If the apparatus still does not work, it gets changed again.

My point is that the executive branch of the U.S. Government is not working and has not worked effectively in respect to the use of the ocean. I think it ought to be shaken up very thoroughly.

Mr. TRIBUS. This question of how to be organized to relate to the problems of our society puts me in mind of a new toy they have for children to prepare them for adult life. No matter how you assemble it, it is wrong.

No matter how we visualize to organize this Government to respond to the problems that are posed by the coastal zone or any other zone, we run into the fact that from one point of view it is going to look right and from another point of view it is going to look wrong, so no matter how we organize, we also have to develop some coordinating mechanism. There isn't any way out of that.

Then that leads you to the question: Why would anybody want to organize around the coastal zone, the coastal zone management area of some sort? I think there are some good reasons to suggest.

As you can see from my remarks, I am talking about starting from what the problem is and building up an organization and a response to it that reflects the needs, and seeing where we get. Form follows function philosophy.

First of all, when I think of a coastal zone, I think of some adjacent land area and I think of going out to sea a distance. I don't want to talk about managing the interface only. There is nothing to that interface. It is a little bit behind the land and somewhat out to sea. We

have to decide how far to go. We have to decide—for example—why, if we extend too far, we lose the original problem.

Take the San Francisco Bay area, for example, where I have some familiarity. If you start talking in the management of that area all the problems of the community and developments and get clear back to the Walnut Hills behind the mountains, in such a large area you lose the original problem that motivated you.

On the other hand, if you don't take in enough area, then you obviously are not taking into account all the factors that affect the zone.

So any division we make is going to be artificial and unsatisfactory from one point of view or another, and yet there is a logic to organizing first the lower level on what I would call the natural unit. I know that the plan is for the State of California to be involved, as the Vice President announced, that initially they will make grants to the State of California, that 1,100 miles of oceanfront is going to have some activity.

So will the State of New Hampshire, with 11 miles of oceanfront. I suspect within the State of California we would find it reasonable and proper to develop subunits which focus on a particular ecological, natural system, and I suspect that in the New Hampshire area they will find it extremely useful to get together with a neighboring State and focus on the natural system that they deal with which obviously is very much related with what goes on in Maine.

In any event, that forms a focus for several kinds of activity: First, it forms a focus for what seems to be emerging, a new political constituency, and ecological constituency that sweeps across political and economic boundaries, and has no concern for it.

For the people who care, who came together and say, "We care about this particular territory," it forms a natural basis for the development of laboratories and for the development of data gathering systems, for data banks, for simulations, for economic and ecological studies, and the interactions of them.

When I spoke earlier of the conflict between these uses I meant the conflict in the sense that the private users and private economies see it and they see the ecological questions as being analogous. I am also taking into account that when you try to take a global view of it, you discover you have grand phrases but you have no basis for real decision-making.

We haven't learned how to do it on a local basis. This is what I meant by the conflict. But this becomes a place in which we can get all the facts and begin to ask what is the impact of our decisionmaking. That has to be funded by someone and this initial start, which calls for a joint funding by the States and the Federal Government, is probably as good a way to start as any.

Now the activities of all of these coastal zone management works clearly have to be contrasted and have to be studied, have to be compared, what is done in one region has to be transferred to another region; if it doesn't occur naturally there should be someone to encourage it. Some regions will be more diligent than others. There will be need to take action more swiftly in some areas than perhaps the States want to go.

As a result of all that, there is going to have to be some place in Washington that is concerned with that question. That organization



will have to have some money to do it with. So we come very quickly to the notion that we do need some centralization of that function here in Washington to deal with these regions. As soon as we start to design this division in Washington, we run into some very difficult problems which are not all called by the fact that the various people in the bureaucracies want to keep what they have. Some of these problems arise in the following way:

If we want to develop, say, in the San Francisco region, and it is a coastal zone problem in the San Francisco Bay area, but it is a region for shipping, a region for shipping of various kinds of transportation, so the Department of Transportation has to be involved. It is a region for commercial development. It is a region in which somebody is measuring the flow of the water and so on. The Department of Commerce has to be involved. Various departments will have to be involved. If you take all the things away from these departments and make a super-department, you discover that it now doesn't make good sense. So there has to be a coordination mechanism.

At this point I want to stop for a very simple reason. The question of precisely what response we made to the Stratton Commission report is now in the hands of the committee, the committee to which I probably would report. It doesn't report to me so I am in no position to anticipate its findings. But one thing I am quite sure of; no matter how you slice it up, the problems of society do not and can not square directly with the divisions we make in the government. Therefore, we are going to have to be content with something that looks somewhat different, I imagine, than the Stratton Report's recommendations.

The main reason that I think we are going to find a difference—and how big it is I don't know—is this: the thrust of the Stratton report is essentially to do something about our relationship to the oceans, because we must. But it is not really couched in terms which say, for example, how do we best deploy our efforts to develop our commercial activities, or how do we best deploy our efforts to get a multiplying effect for every dollar the Federal Government spends, that there will  $x$  more dollars spent by the private sector. It is not necessary that it should have had that thrust. But, clearly, some people have to take that view. Therefore, as we go forward into finding the right organization with which to grapple with this problem, I think there will be some compromises from the Stratton view.

But I think the principle enunciated there, namely, to find a central focus for these problems, is a valid one, and I support it as I have in previous testimony.

Is that responsive?

Dr. CHAPMAN. Thank you.

Mr. BEGGS. It seems to me that the problem we are addressing ourselves to today in coastal zone management involves the basic problem of how you form an effective theme between the Federal, State, and local jurisdictions. Most of our major cities are located within the zone, and, indeed, their areas are causing perhaps greatest damage to the coastal zones.

This problem of attacking the environmental problems in the coastal zone is much the same as many of the other urban problems with which we are trying to grapple. I fail to see how the creation of still another executive agency is going to solve that problem. It is a prob-

lem that we have not yet solved effectively in working on all of our urban problems, in working on all the problems that we have in the partnership that should and does exist between the Federal, State, and local levels.

I think we have to do a great deal more in exploring ways and means of setting up an effective management system that will enable us to work together on the many, many problems that we have in this urban society which we have and are still in the process of creating. We have created a number of executive departments over the past decade. The department with which I am associated is only two and a half years old.

Now we are talking about restructuring this one a little bit or reshaping that one. I am not saying that this might not be a good idea. I realize many possibilities for restructuring the Federal Government that conceivably would work better. But I submit to you that the structure we have has not yet had sufficient time, nor have we run out of the experiments that we are trying to conduct.

There has been an enormous amount of legislation in the environmental bills put on the statute books in the last 2 or 3 years. We have not had sufficient time to work out an effective relationship yet with these laws. I would submit to you that perhaps we ought to try to grapple with this problem within the structure we have while trying to progress on this basic problem of how do we manage this system on a team basis, bringing all of the governments at varying levels together.

Dr. CHAPMAN. I want to make one more comment that just ran through my mind. I have in my pocket a little key ring that was given to me a week ago in Rome. It is to commemorate the seagoing study tour on board an academic ship. This was a trip made for the purpose of training oceanographers and biological oceanographers in the developing countries. There were students on board from 12 developing countries. The voyage was made down through the central Atlantic, and the coastal work was done off the coast of Brazil.

It was one of the nicest programs of coastal oceanography that I have seen. Then it came up through the Caribbean, offloaded everybody on the east coast of Mexico. As the students went off, they had a report about 2 inches thick. It is not padded. It is a good, solid report of the results from that trip that the students had participated in, with charts, graphs, and data all worked up in Spanish.

The reason for bringing this up is because this is one field that we don't work well in. In the first place, we are laying up our research vessels the same size as that vessel, whereas that one is one of a dozen new ones being put to sea by the Russians. We couldn't manage a trip of that nature to get that international public relations effect.

I am quite sure that there are so many problems involved in the organization of Government we cannot do anything about it, but that is one of the things that bothers me a little bit.

Mr. DE SPAIN. In listening to the presentation today, I am reminded of some things that Dr. Wenk said in his introductory remarks to this series of meetings. When you enter a wilderness, as our ancestors did, you are faced with very few basic things you need. You really only need three or four things to survive. You need air that will sustain you, the kind you can breath and survive on. That is very quick. Water

is something that is kind of next in line, and without that you are in trouble very quickly. You can get along for about a month in the wilderness, if you keep your wits about you, without food. You can survive for quite a while. And you need some kind of protection against the elements or against the adversaries. We have Representatives in the House to take care of us on a national scale.

Then Dr. Wenk referred to, one, the things that we have to worry about, and he named essentially four things I have to take note of. One was neglect, which Dr. Chapman was talking about, ignorance—the educational needs we have, rivalry, and human greed.

I think in our efforts to achieve the first four we are in that kind of wilderness where we don't recognize the dangers, because they are insidious, we don't know about them for perhaps 20 years after being subjected to them. So we have a new set of standards to be aware of in our modern society. But I think in solving this kind of problem we are talking about today, for a long way in the future, we should look to those four basic needs and at the same time look to see that we don't need these four items: Neglect, ignorance, greed, or rivalry.

Mr. PORRO. I think it is very unfair to answer the question that Dr. Knauss set forth with regard to the recommendation for a new agency. It was, namely, by limiting the answer to the coastal zone.

I think that the volumes that back up the report demonstrate that we are not just talking about the coastal zone when the recommendation of NOAA was put forth, but, a subject matter that was much more that of the oceanographic and atmospheric problems, and so forth.

I think perhaps if we were just to look at the coastal zone alone and say that was the only problem, maybe we could fit it in somewhere in a notch, in a proposed lead agency.

I think as to many areas of progress that we have witnessed in this country, we find that a problem area grows to the degree that all of a sudden everyone starts truthfully waking up to the fact that it needs some particular and special treatment. I think that that is really what is behind the whole report. Therefore, I would like to rephrase Dr. Knauss' question as a result of the answers, and say: Do any of the departments that are represented here today feel that the problems, the subject matter that was discussed in the report, that their particular department is prepared to take on that task, the overall task of the ocean, the atmosphere problems, and the coastal zone?

Dr. CHAPMAN. That is a good question.

Colonel McGUINNESS. The answer is no.

Mr. TRAIN. Or it may be yes.

Colonel McGUINNESS. We have a clear division of opinion.

Mr. TRIBUS. I think the question you are asking puts several of us in a difficult position, because the question will be answered at a level higher than we are. I think speaking for the Department of Commerce, we would be quite pleased if we were asked to do this.

You know, there are about 3 million Federal employees. Those of us who come in to serve as part of the administration attempt to serve as a team, attempt to find the things we should do for the good of the country, and try to persuade all the people who were here before us, and who will be here after many of us are gone, as to what direction we ought to go in.

In that context, I would say that the people in the Department of



Commerce want to help with this issue. If the President and his advisors decide they would like us in the Department of Commerce to do it, we would be delighted to do it. If it turns out that some other course is required, we will support that.

However, I think within the Department there are a lot of people who have had a long concern with the ocean, a long history of involvement with it, and would be delighted to have it in the Department of Commerce, just as the Department of the Interior. That is about as good an answer as you can get today, given the decision situation.

Mr. PORRO. How about the Department of Transportation?

Mr. BEGGS. We would be delighted.

Mr. PORRO. No one disputes that each one of the departments here today has effectively made a role as part of an overall time, the point being that if we break it up into segments I think those segments have been well represented in the individual departments. But what we are saying is that now the problem of the oceans, the problem of the coastal zones as a whole system has, at least on the factual matter that has been presented in the report, gained the status of being a whole subject matter.

I don't think there is a soul that is saying that as a result of achieving this status, all other departments should be stripped as to the particular segments, and that they particularly should perhaps retain this. But I think it is a very weak subject to say that what is needed is some further coordination. My view of it is that just strictly a coordinating type of group is a very weak group.

Dr. CHAPMAN. Thank you very much.

Mr. EDWARDS. I might say I am secretary of the Oregon Senate and have a committee on submerged and submersible lands planning and coastal zoning. We share many of our problems with an area to the north which seceded and became a State in 1889—Washington. We have the same estuarine and also share the same boundaries. I think Oregon is unique, and maybe singularly, in that we are a State where the public owns the beaches.

Oregon also is undertaking a kind of do-it-yourself program. In 1969 it set up this study committee. They also enacted a law for coastal and State zoning. They gave the committee responsibilities that were plain but money that was little.

We have heard very learned expert identification of all of the problems of the coastal zone. We have heard enlightened practitioners, leaders and scientists in Government discuss solutions. Many of them have been on the same track, some almost repetitive. We haven't heard anyone talk about any avenues to get funds to commence now to finish the job.

We do hear about NOAA, maybe like the ark that is going to float a long time before it comes to land. The question I have, which I pose to everyone up there, is this: Do you have any department or division that a State like Oregon, which is undertaking this kind of a program, or any other State, could submit a proposal for funding and aid?

In view of the fact that the Federal Government is interested I want to know if they are interested financially and what can be done at this time.

Mr. TRIBUS. I don't know the particulars in Oregon, as to whether

you qualify for assistance, assistance from the economic development authority. I know it is a beautiful State, but not too prosperous.

Perhaps you can get help from EDA. I am not saying that they have money specifically for this purpose. It turns out, though, that funds have been made available for them for economic developments.

Some of those funds, as I pointed out, have been for the development of various things along the seacoast.

Dr. CHAPMAN. I think really the answer to his question is there are a number of programs from which States can and do get assistance in this respect. It really just happens presently that there isn't very much money in any of them.

EDA, I think, is a little bit better off.

Presently, we can't get money into these ocean-oriented and coastal-oriented projects. That is the big problem.

Mr. EDWARDS. I am sure we all want to express appreciation for all the high echelon department people and scientists who helped make this such a great success. It has been a great educational thing for me.

Dr. CHAPMAN. Thank you, sir.

Mr. WILLIAM HARGIS. I am representing the State of Virginia and I am also chairman of the Council of Maritime States, Commonwealths and Territories.

I am sure that many of us are aware that the States have similar problems as the Federal Government is facing right now when they consider the question of will there or will there not be a single agency within the State that has responsibility over marine affairs or, in this case, coastal zone affairs.

I don't know that all of us will come to the same conclusions. I doubt that any of us will develop full executive State authorities or offices at the cabinet level.

We will, however, probably approach it from a point of view of some coordination with the Federal Government.

I can't offer much illumination beyond that on solution of the Federal Government's problem. I can concur with the gentleman from Oregon. That is that until NOAA floats, if it ever does, we would like to have identified a source or some major source within the Federal Government.

We would like even more importantly to have sufficient funds appropriated to these activities from which we can draw, with ample State support—and the States have to support this. I think these things have to come along before the Federal coordination problems are solved, if they ever will be. We need people with ideas, with will and with energy, and we need support.

We need support for personnel. We need support for facilities. We need money. Congress must, the Executive must, provide these things if we are really going to get moving. This is not just a problem of research. It is a problem of trying to deal with real problems, real people, real industries, and in a real time frame. We are losing ground.

I think the best thing this group could do would be to follow Dr. Chapman's theme: Money, support, and some identification of avenues.

Dr. CHAPMAN. Is there any other speaker?

Mr. JONES. I am from New Hampshire.

I would like to correct the record, Mr. Chairman. We have 18 miles

of coastline, and we are trying to cooperate with our sister States of Massachusetts and Maine to get some type of coordinating effort.

I would specifically like to address the group in the sense that we have just constructed a laboratory called the Jackson Estuarine Laboratory, largely with National Science Foundation funds. We have 40 to 50 highly qualified professors in the area of science and technology. One of my jobs in coming to Washington, in addition to this meeting, is to try to obtain funding for the laboratory as a whole.

To thread one's way through the mystic maze of all the various agencies in Washington that do provide support in this area is confusing and very time consuming.

I think we would be way ahead in the areas of State support and university support if some central agency could clear these types of programs rather than having many overlapping areas, and particularly in the area of basic research, in understanding of the various processes taking place in estuarine and ocean phenomena.

Dr. CHAPMAN. Gentlemen, you are all very busy men. We have done very well to hold you here for this length of time, but this is all you have signed on for.

You have four or five more questioners.

We will take 10 more minutes.

Make it short and come on.

Mr. CULBERTSON. It seems to me that the reason that we have failed at some of these things is because we are not set up properly. We are talking about coastal zones here. Many of these fish that we have to manage and take care of are not native to any of the States, but they are migratory. I speak first of the great sardine resource of California that we have lost. It used to go all the way up into British Columbia. We have a similar resource on the Atlantic and on the Gulf. They are not native to any States. They don't lend themselves to study like they should because of that.

On Federal responsibilities, we are talking about coastal management. I don't know that you have the same problem. The coasts will still be there, but these resources, some of them, will not be there. If we had taken care of these two that I am speaking of, they, today, could be producing over four billion pounds of fish. That is as much as we are producing all together. Just an illustration, I was associated for many years with Alaska. The coastline there is just as great as it is in all of the United States. The management of coastal areas there was divided into a dozen or more districts. They were under the same jurisdiction. You didn't have to get permission from some State down the line to study or manage these resources.

It seems to me that we need to get a better base from which to operate. I don't know that that is the problem here. But I wanted to mention that.

I think certainly the coastal management of the fisheries is certainly very important.

Dr. CHAPMAN. Thank you.

Mr. RAY LENNON. Dr. Chapman, I am chairman of the Texas House of Representatives Interim Study Committee on Oceanography. I am not an oceanographer or scientist. I am a businessman.

All I hear is problems here. I came looking for some solutions. Somebody has to be the head man someplace. At some point in time



it appears there should be national policy. I haven't been associated with oceanography for an extended period of time. But all I hear is problems, problems.

With this mass of intelligence that is here, it would appear that somebody would say specifically: "This is what we ought to do." It may be a wrong course at some point in time, but you can always correct your course, I find. But I haven't seen a great deal of movement here. It appears there either has to be an agency or a coordinating agency so that we can find out from these people what you can do back in your State and how you can be funded. If you have to go to one, then two, then three, right down the line, hunting like in blind man's bluff, I don't know how you can ever get out of this quagmire.

But it appears to me, as a businessman, that somebody has to make a decision and stop restating the same problems over and over again. That is all I heard. I saw you at the MTS conference at Miami and heard the same thing. I heard the same people, or a number of them, stating the same problem. You are backtalking to one another again.

I hope I don't offend anybody. This might be in bad form. Somebody ought to make a decision either in the legislative or the executive branch of the Government. These people here ought to try to press for a decision and offer specific solutions instead of reiterating the same problems.

Dr. CHAPMAN. Sir, I would just like to call your attention that you will have a copy of the hearings sent to you of last night, and you will see some recommendations that I made, and my own difficulty is I can't get people to adopt them.

Mr. LENNON. I would like to try them on for size.

Mr. HAROLD BISSELL. I am representing Governor Reagan and the Lieutenant Governor today. The Lieutenant Governor has already appeared before the subcommittee and has testified concerning the bill that would establish NOAA. I have a statement that I will not read. I would like to make a few comments.

I will quote some of the Governor's message that he gave to the legislature when he set up last winter a department of navigation and ocean development in California. Among other things he said "I propose the Department of Navigation and Ocean Development would have the continuing responsibility for implementation of this plan."

Then he goes on to say "The Department of Navigation and Ocean Development will be the key to California's ocean future."

The report, "Our Nation and the Sea", calls for coastal management, which would provide policy objectives for the coastal zone and authorize Federal grants in aid to facilitate the establishment of coastal zone authorities empowered to manage the coastal zones.

The report goes on to state that "The key functions will be to coordinate plans for uses of coastal waters and adjacent lands".

California has its department, the navigation and ocean development, or as of November 11, it will be effective, and there no doubt will be Federal legislation creating the coastal zone management act.

In California, the Department of Navigation and Ocean Development has been designated by the administration to be the coastal zone authority. We feel the coastal zone authority should be an arm of the executive branch of the Government, responsible in a direct line

to the Governor. The present department of navigation and ocean development is only a beginning. It has the power to plan, regulate and require and develop. Because of both Federal and State jurisdictions, this coastal zone authority concept must be a joint venture and, therefore, jointly funded. We have reviewed the report and we agree with the majority of the recommendations.

I have already referred to the Lieutenant Governor having already appeared to comment on the bill.

Our objective in California will be to tailor a coastal zone authority for maximum benefit in conforming to the recommendations of Congress. We would expect to participate to the extent that funds are provided by Congress and intend to continue to move aggressively at the State level.

Thank you.

Dr. CHAPMAN. Thank you.

Mr. THOMAS SODDITT. I would like to state as a matter of record that the State of Georgia has created the management system to coordinate with the Federal Government in management of coastal zones. This agency is called the Ocean Science Center of the Atlantic Commission. It has been given broad guidelines by the State legislature. I would like to submit the guidelines for the record, to show that the State of Georgia is prepared to coordinate with the Federal Government, when the Federal Government gets an agency that we can get some funds from.

Dr. CHAPMAN. Thank you.

I want to thank very much the gentlemen who have been with us this afternoon, who participated so frankly.

I know how busy you all are. I know we all appreciate your coming here to be with us.

(The following material was received for inclusion in the record:)

#### ATTENDANCE LIST AT COASTAL ZONE MANAGEMENT CONFERENCE

Robert B. Abel.....	Sea Grant Program.
D. A. Adams.....	Wilmington, N.C.
Lewis Alexander.....	University of Rhode Island.
Frank Allen.....	University of North Carolina.
John R. Anderson.....	Virginia.
W. F. Anderson.....	Alabama.
William J. Andrews.....	Indiana.
Emmett Angell.....	MAS, Washington, D.C.
Arthur J. Arseneault, Jr.....	Science & Technology Commission, Georgia.
Mrs. Audrey Ayers.....	League of Women Voters Education Fund.
Charles Bearden.....	South Carolina.
Hon. James M. Beggs.....	Under Secretary, Department of Transportation.
William S. Beller.....	Hawaii.
Frederick Betz, Jr.....	Coastal Plains Center for Marine Resources, Washington, D.C.
Harold Bissell.....	State of California.
F. G. Blake.....	California Advisory Commission.
John Botzum.....	Ocean Science News.
Stephen S. Boynton.....	Office of Senator E. F. Hollings, South Carolina.
Ralph W. Brauer.....	Duke University.
Morris L. Brehmer.....	Virginia.
James T. Brown.....	Division of Commercial & Sport Fisheries, North Carolina.

C. Bussmann	Virginia.
John Byrne	Oregon.
J. M. Caldwell	U.S. Army Engineers, Coastal Engineering & Research Center.
John C. Calhoun	Texas A & M University.
John R. Capper	Maryland.
F. T. Carlson	Department of the Interior.
R. L. Carnahan	Travelers Research, Hartford, Connecticut.
W. M. Chapman	California Advisory Commission on Marine and Coastal Resources.
J. H. Clotworthy	Florida.
Ann Colarusso	Durham Morning Herald, North Carolina.
Bert Cole	Washington.
R. J. Crowley, Jr.	Department of Resources and Economic Development, New Hampshire.
John H. Dolan	State of California.
George Doumani	LRS, Library of Congress.
Willard D. Dover	Florida.
Robert Doyle	Office of Science & Technology, State of Maine.
H. W. Dubach	Coastal Plains Region Commission, Washington, D.C.
W. J. Duddleson	Conservation Foundation.
Calvin B. Dunwoody	Department of Natural Resources, Rhode Island.
Cecil L. Edwards	Oregon.
Griffith C. Evans, Jr.	Washington.
R. B. Everett	Council on Marine Resources, Mississippi.
George W. Farwell	University of Washington.
Dick Fleming	Massachusetts Port Authority.
George C. Freidel	American Management Association.
Herbert Frolander	Oregon.
S. L. Frost	Department of Natural Resources, Columbus, Ohio.
Paul Fugate	Jackson, Mississippi.
Paul M. Fye	Woods Hole Oceanographic Institution.
M. C. Garrison	Office of the Oceanographer of the Navy.
Phillip L. Goggin	Maine Sea & Shore Fisheries, Maine.
Stanley R. Goodnow	Maine.
L. J. Goodsell	Great Lakes Commission.
R. Frank Gregg	New England River Basin Commission.
Edwin T. Haefele	Resources for the Future.
C. B. Hamm	Ocean Science News.
Leigh H. Hammond	North Carolina.
W. J. Hargis, Jr.	Panel Member, Virginia.
Carola Holmer	Swedish Embassy.
Bruce Johnson	Florida.
E. Walton Jones	N. C. State University.
Galen E. Jones	New Hampshire.
Thomas E. Kane	North Carolina.
Stephen Keiley	Mayor's Office, New York City.
Russell Keim	National Academy of Engineering, California Marine Commission.
John A. Knauss	University of Rhode Island.
Dr. E. B. Konecci	Special Consultant, Marine Council, University of Texas.
Robert Krueger	California.
Samuel A. Lawrence	Saguenay Shipping, Ltd.
Ray A. Lemmond	Texas.
Lila B. Levy	Conservation Foundation, Washington, D.C.
William Lewis	Port of New Orleans, La.
Jon M. Lindberg	Washington State.
Thomas L. Linton	North Carolina.
John Lyman	Do.
L. G. MacNamara	New Jersey.



J. M. McCabe	Coastal Plains Regional Commission.
W. McClesky	Maryland.
C. H. McConnell	Pennsylvania.
Col. William V. McGuinness, Jr.	Corps of Engineers.
M. J. McLeod	Cape Fear Laboratory, N.C.
Charles Maechling, Jr.	National Science Foundation.
Bob Maher	Office of Congressman Paul Rogers.
Nelson Marshall	University of Rhode Island.
Dorothy Morrell	Washington.
Laurence F. Motl	Wisconsin.
Jerome P. Mullins	Georgetown University.
Dr. Herbert L. Myers	Maritime Administration.
Hu B. Myers	Louisiana Department of Public Works.
Lawrence Nakatsuka	Office of Senator Fong.
Irving Newhouse	Washington State.
Wallace H. Noerenberg	Alaska.
Donald L. Norling	Ohio Department of Natural Resources.
Ted Pankowski	Izaak Walton League.
Peter M. Perceval	University of West Florida.
Alfred E. Porro, Jr.	Attorney, New Jersey.
Nancy Price	LRS, Library of Congress.
T. A. Pryor	State of Hawaii.
John Quarlson	Dept of the Interior.
Kenneth J. Randall	Maritime Administration.
Mike Rappoport	NAEC, Washington, D.C.
C. V. Rau	Grumman Aircraft Engineering Co.
H. V. Reid	Chamber of Commerce, Wilmington, N.C.
Ed Reynolds	State of Alabama.
Fred O. Rouse	Great Lakes Basin Commission.
W. Mercer Rowe	Chamber of Commerce, Wilmington, N.C.
F. J. Ruder	c/s Oceanographer of the Navy.
W. L. Rutherford	Illinois.
P. M. Savage	Maine.
Charles F. Schwan, Jr.	Attorney, Washington, D.C.
Roy T. Sessums	New Orleans, Louisiana.
William Seymour	New York.
Lyle S. St. Amant	Wildlife & Fisheries, Louisiana.
Admiral E. C. Stephan	Ocean Systems, Inc.
William A. Sternhoff	State of New Jersey.
H. B. Stewart, Jr.	ESSA & Florida.
William H. Stoll	Texas.
Thomas H. Suddath	Georgia.
Gerard E. Sullivan	Woods Hole Oceanographic Institution Massachusetts.
Paul Sutton	Italy.
Norman E. Taney	Geonautics, Inc., Falls Church, Virginia.
James M. Tobias	South Carolina.
Hon. Russell E. Train	Under Secretary, Department of the Interior.
Hon. Myron Tribus	Assistant Secretary, Department of Commerce.
V. Admiral P. Trimble	U.S. Coast Guard.
Joe W. Tyson	Gulf Universities Research.
D. B. Usry, Jr.	Westinghouse, Ocean Research & Engineering Center, Annapolis, Md.
Jack R. Van Lopik	Louisiana State University.
Louis Vande Velde	Marine Technology Society.
Wayne H. Vespoor	Michigan.
C. A. Weberg	Alaska.
David A. Wallace	N.Y. State Conservation Department.
Edward Wenk, Jr.	National Council on Marine Resources and Engineering Development.
Harold G. Wilm	Water Resources Council.
John L. Wood	Marine Resources Commission, Virginia.

STATEMENT BY FREDERICK O. ROUSE, JR., CHAIRMAN, GREAT LAKES BASIN  
COMMISSION, ANN ARBOR, MICH.

The Great Lakes Basin Commission was established by Executive Order of the President on April 20, 1967, under authority of the Water Resources Planning Act of 1965 (Public Law 89-80). It is charged with the responsibility to "serve as the principal agency for the coordination of Federal, State, inter-state, local and non-governmental plans for development of water and related land resources . . ." and prepare and keep up-to-date a coordinated joint plan for the basin. The Commission was established at the request of five of the eight member states, with the concurrence of the other three states, because of the general realization of the pressing need for coordination among the multiplicity of Federal, State, local and non-governmental organizations with strong interest and responsibilities in water resource planning in the Great Lakes Basin.

The Commission is pleased to note the ever increasing interest in natural resource planning being evidenced at all levels of the public and private segments in this country. We commend the significant efforts of the Commission on Marine Science, Engineering and Resources in investigating the problems and as yet untapped resources of the oceans and in suggesting more effective institutional arrangements for their management.

The Great Lakes Basin Commission wholeheartedly endorses the concept that effective planning for utilization of our natural resources requires that continued, coordinated, joint efforts from the earliest stages of all levels of the public and private segments. Institutional arrangements which cast one level of Government in the role of planner and another in the role of the reviewer, or "judge," or which compartmentalize the planning functions by political entity, place restrictions on the planning process which severely reduce its effectiveness. The Great Lakes Basin Commission was established in order to overcome the problems of the single-state, single-Federal agency approach to the planning process. Its member commissioners are unanimously enthusiastic about the progress made to date by the Commission and the success of the coordinated joint approach to planning for the effective utilization of the water and related land resources in the Great Lakes Basin.

A statement of the Vice-Chairman of the Great Lakes Basin Commission, Mr. Fred E. Morr, Director, Ohio Department of Natural Resources, to the State and Federal Water Officials in Salt Lake City, on the report, "Our Nation and the Sea" reflects my views which I believe to be generally supported by other members of the Commission. Mr. Morr states that, "As Vice-Chairman of the Great Lakes Basin Commission, I am afforded a rare partnership with seven other Great Lakes States. Because of the general structure and purpose of the Great Lakes Basin Commission, I can look at the Report as it concerns that relationship."

The following few paragraphs are paraphrased from his statement.

The report quite obviously deals with two major water areas—the oceans and the Great Lakes. So much of the original intent of the Marine Study and its proposals are significantly aimed at the Great Lakes. Fitting such a concept equally to the Great Lakes, where geographic, physical, political, and institutional arrangements are so sharply different, will bring the total report under fuller scrutiny and debate. The Great Lakes Shorelines (U.S. portion) represent about one-tenth of the nation's shorelines. However, the Midwest region which these shorelines serve, has about 4% of U.S. area, 17% of the population, and produces close to half of the nation's taxes. The coastal zone for the Ohio portion of Lake Erie, for example, would vary from 30 miles to 100 miles, and cover about one-third of the state. The report recommends the establishment of coastal zone authorities for the purpose of planning, regulating, acquiring and developing.

These are familiar words to all of us. These same functions are also placed in numerous state and Federal agencies, as well as in local governments. A new overlapping coastal zone authority in any area could not easily superimpose itself over all other entities without multiplying the confusion.

There are a number of sections of the report, "Our Nation and the Sea," which are of concern to us. First is the recommendation of establishment of coastal zone authorities. These authorities would be created by the States. Their principal purposes would be to plan and regulate land and water uses and to acquire and develop land in the coastal zone. We feel that this proposal would have difficulty, in its present concept, in obtaining enthusiastic reception by the states of the Great Lakes region. Most states already possess the regulatory machinery proposed, and any new layering of agencies at this level would have a difficult

journey to success. In addition, the coordination of programs visualized for the coastal authorities is perhaps already being approached.

Because of the acceleration of problems of the Great Lakes, the States and Federal agencies have formed the Great Lakes Basin Commission to guide the development of the lakes via planning on a partnership basis. This is a young organization; in fact, it had not even emerged at the time the Marine Study was started. However, we feel great progress can be made through this existing arrangement, and we are apprehensive that the creation of yet another agency with overlapping powers and inevitably limited funds would only confuse and constrain progress now being made. Time is critical if we are to preserve the Lakes. We agree with the goals of the Marine Sciences Commission regarding the Great Lakes, but feel the institutional vehicle for achieving these goals has already been formed and is now functioning. Private industry, conservation groups, municipalities, port authorities, and appropriate State and Federal agencies are represented in the Great Lakes Basin Commission, or its task forces.

The overall coordination of the Basin Commission in policy, State and Federal planning, fund sharing, and the establishment of priorities for project and program development is provided by the Water Resources Council. Through this chain, Congress and the President receive well organized and vital recommendations on critical needs. At present, the Great Lakes Basin Commission is working on a framework plan. Twenty-six different Work Groups are now at work—each containing Federal, State and other representatives. Some of the Work Groups which are similar to the study projects recommended in the Marine Commission report include: Limnology of Lakes and Embayments, Water Quality, Fish, Navigation, Lake Levels and Flows, Shore Use and Erosion, Land Use, Recreation, and Plan Formulation. The Great Lakes Basin Commission Framework Study is scheduled to be completed in 1972.

There are indeed legal institutional impediments to getting the job done on the lakes. Some are serious, but none will be solved by the creation of additional State and Federal agencies. The Marine Commission's recommendation that financial grant approval be continued upon the States' formation of such a coastal zone authority might easily become an obstacle to a harmonious State-Federal relationship. This particular recommendation does not seem oriented towards solving actual program needs as we would feel it should. We feel that the Basin Commission, because of its broad membership, offers a far more effective vehicle than would be gained by creation of State coastal zone authorities.

Certainly we would be the first to recognize whether or not existing implemented programs are fully meeting the needs of the Great Lakes area. They are not. We are deeply concerned with inadequate progress being made on limnological research, shore erosion control, shore line management, pollution control, silt problems, recreational development, and preservation of scenic areas. Inadequate and timid management goals and policies for the development and use of the Lakes are also hang-ups we are painfully aware of—perhaps conditioned by inadequate funds.

These are matters which the State and Federal governments must face clearly around the conference table. But we hasten to assure you that the conference table does exist, and as long as it has its legs well shored up, we see no institutional impediments to using it. What we need most are:

1. A clear policy for the use and development of the Great Lakes.
2. More money.

Dollars have come painfully slow to many of the States; but that trend is changing dynamically. Large water bond issues have been passed by several states. There is a new and forceful program of State water planning, aided by the grant program of the Water Resources Council. For example, Ohio has completed a \$300 million long range plan for Northwest Ohio and is spending large sums to implement it. We are convinced that Federal grant programs—*backed up with money to the States*—not authorizations, or new agencies—will accelerate this tempo even more.

Our reasons for citing a hesitancy about accepting the Marine Commission's recommendation for institutional changes on water management responsibilities is that it only deals with one portion of our water effort. Experience has painfully demonstrated that one cannot effect a piecemeal reorganization of water resources agencies without compounding and opening a Pandora's box of many other problems. We would hope that the studies of the National Water Commission might suggest new structuring—if there is to be any—but in doing so, might



also provide a total approach to the total water management picture. In the area of Natural Resources Management, we feel we possess the minds and souls, but have lacked public understanding and fiscal application toward meeting yesterday's failures, today's needs, and tomorrow's goals.

The above puts into focus the States' viewpoints, which need to be seriously considered. I would like to suggest that the Committee consider the advisability of establishing a research laboratory for the Great Lakes to focus attention on the research problems of the Lakes and alleviate the fractionalized efforts now devoted to solving these problems. Authority for such a laboratory has been provided, and the University of Michigan has made a site available, but no further action has been taken.

Although there are striking similarities between the Great Lakes and the oceans as regards problems and techniques of data collection and analysis, there are also many striking and important differences. The Great Lakes Basin is essentially a fresh-water, river system with very large, natural reservoirs. It has many management problems which are not amenable to the approaches appropriate to solutions of oceanic problems. On this basis, the Great Lakes Basin Commission feels that inclusion of the Great Lakes in the proposed legislation would serve to diminish rather than strengthen the excellent start made in coordinated joint planning for management of the Great Lakes.

While we applaud, in the interest of efficiency, the concept of consolidation of Federal agencies with similar and/or complementary missions, we feel obligated to point out that the establishment of single-state coastal authorities for planning, with review by a Federal agency (whose major mission is data collection and research, rather than planning), is a step backward from the principles and goals of coordinated joint planning established by the Water Resources Planning Act of 1965. We would urge careful reconsideration of this portion of the proposed legislation, while at the same time commending the desire for better management of our coastal and estuarine areas which prompted it.

I appreciate the opportunity to present my views to the Commission.

---

#### COASTAL ZONE MANAGEMENT IN CALIFORNIA

(Presented by Harold Bissell, executive secretary, California Interagency Council for Ocean Resources)

For some time, extending back at least to the Governor's Conference in 1964 on "California and the World Ocean", there has been increasing emphasis in our State upon solving the problems of conservation and use of our coastal resources.

The Governor's Advisory Commission on Ocean Resources (GACOR) during its existence from 1963 to 1967 made numerous recommendations for State action in the field of ocean oriented activities, and a very thorough and comprehensive analysis of many of California's coastal problems was prepared in 1965 by the Institute of Marine Resources for the State Office of Planning, financed in part through an urban planning grant under provisions of Section 701 of the Housing Act of 1954 as amended.

In 1967 the Legislature created the California Advisory Commission on Marine and Coastal Resources (CMC) replacing GACOR. They also stated that it is the "policy of the State of California to develop, encourage, and maintain a comprehensive, coordinated State plan for the orderly, long-range conservation and development of marine and coastal resources, which will ensure their wise multiple use in the total public interest". The same legislation directed the Governor to prepare a Comprehensive Ocean Area Plan (COAP).

The Governor responded by creating the Interagency Council for Ocean Resources (ICOR) to prepare the plan—under CMC review.

Due to problems of funding and organization, the ICOR planning staff was not fully operational until the summer of 1969, and is now proceeding through initial planning steps including the establishment of planning objectives and the definition of the planning area. Most of the current effort is being directed towards a study of the problems of obtaining a coastal zone inventory.

Governor Reagan meanwhile submitted a Reorganization Plan, to the California Legislature, in which he called for a new Department of Navigation and Ocean Development to be formed from a restructured Department of Harbors and Watercraft.

In his message to the Legislature when submitting the Reorganization Plan, Governor Reagan stated that "the actions proposed in this Plan will provide-

a coordinated approach to harnessing and conserving the last great untapped resource of California—the ocean. This will assure the orderly development and continuing administration of a comprehensive coastal area plan to guide the many decisions which affect the use of California's coastline”.

“I am proposing, in Reorganization Plan No. 2 of 1969, a Department of Navigation and Ocean Development to provide the necessary structure of government so that a Comprehensive Ocean Area Plan for California can become a reality. The Department of Navigation and Ocean Development would have the continuing responsibility for implementation of this plan, a vital responsibility which does not now exist within State Government”.

“In order to harness the collective resources of State Government, I established the Interagency Council on Ocean Resources, composed of representatives of those agencies of government with interests in California's coastline and knowledge to contribute to its development”.

“In 1967, we established the California Advisory Commission on Coastal and Marine Resources by an act of the California Legislature, with responsibility to report recommendations to the Governor and the Legislature. This Commission brings to bear on the planned development of the ocean the resources and expertise of the private sector together with California's rich educational resources. The Commission can serve in an advisory capacity to the Department of Navigation and Ocean Development, thus establishing the necessary interaction between ideas, workable planning and the combined resources of State Government”.

“The Department of Navigation and Ocean Development will be the key to California's ocean future. Its formation now will insure that California will remain in the vanguard of oceanography, marine research, ocean conservation and ocean resources development among the states of the nation and the nations of the world. It not only will guarantee the wisest use of this greatest and last resource for Californians, it also will insure that California will be both leader and helper to all of its Pacific Ocean Basin neighbors as the exploration and uses of the ‘inner space’ of the seas advances into the next century”.

The California Resources Agency, in a report entitled “A Review of Our Nation and the Sea etc.”, listed five recommended actions including: “4. Strong support be secured for the Governor's Reorganization Plan No. 2 of the 1969 Session (Department of Navigation and Ocean Development) to not only serve as a framework for concentrating the State's ocean oriented programs but to also function as the federally-proposed Coastal Zone Authority”.

The report “Our Nation and the Sea” calls for a Coastal Zone Management Act “which will provide policy objectives for the coastal zone and authorize Federal grants-in-aid to facilitate the establishment of State Coastal Zone Authorities empowered to manage the coastal waters and adjacent land”.

The report goes on to state that “the key functions of the Coastal Zone Authority would be to coordinate plans and uses of coastal waters and adjacent lands, and to regulate and develop these areas”.

And further, “the Authority will have to work closely with other State agencies to achieve the objectives of its plan, because the activities of these other agencies in promulgating conservation and fishing regulations and water quality standards, for example, significantly affect coastline and offshore water use. Procedures must be established within each State to ensure that the actions of other State agencies are consistent with Authority approved plans. To strengthen the Authority, the Federal Government should consider withholding grant-in-aid assistance from any project which contravenes the plans of the Coastal Zone Authority”.

Now, California has its Department of Navigation and Ocean Development, and there will be Federal legislation creating a Coastal Zone Management Act, and in California the Department of Navigation and Ocean Development will be the Coastal Zone Authority.

The ICOR planning group now preparing the Comprehensive Ocean Area Plan is making contacts with local government planning agencies, and with the private sector, including utilities and major land owners or developers concerning their present or planned activities. This planning group is also working closely with committees of the CMC, as the planning steps are developed. The Comprehensive Ocean Area Plan will recognize all interests in the coastal zone and the next step will be implementation by the Department of Navigation and Ocean Development functioning as the Coastal Zone Authority.

We feel that the Coastal Zone Authority should be an arm of the executive

branch of government, and responsible in a direct line to the electorate through the Governor.

The present Department of Navigation and Ocean Development is only a beginning. It can function as an authority if it is given the teeth to implement plans—if it has the power to plan, to regulate, to acquire, and to develop.

Because of both Federal and State jurisdictions, this Coastal Zone Authority concept must be a joint venture and therefore jointly funded.

We have reviewed the report "Our Nation and the Sea" and we agree with the majority of the recommendations. Lt. Governor Reinecke, in his statement to the House Subcommittee on Oceanography on October 9, expressed California's interest in this report and support of the concepts in HR 13247 (Lennon et al.).

Our objective will be to tailor a Coastal Zone Authority for maximum benefit, and conforming to the recommendations of Congress. We would expect to participate to the extent that funds are provided by Congress, and intend to continue to move aggressively at the State level.

STATEMENT OF ROBERT G. DOYLE, DIRECTOR OF THE OFFICE OF SCIENCE, TECHNOLOGY  
AND MINERAL RESOURCES, MAINE DEPARTMENT OF ECONOMIC DEVELOPMENT

Mr. Chairman, members of the committee, my name is Robert G. Doyle. I represent the State of Maine as Director of the Office of Science, Technology & Mineral Resources. A major part of my responsibility in this position is to assist in the development of the physical and economic resources of the Maine coast.

The Maine coast has been involved, ever since Colonial time, in shipping, fishing, resource development and recreation. During the last few decades, recreational activities and the coastal fishery have been the most important aspects of the marine economy. The fishing industry has enjoyed a continuing growth since World War II with average fish landing values of \$20 million per year from 1967 to the present—this is in the face of a generally declining fishery, nationwide. The recreation economy has exploded in the last decade with coastal land values quadrupling since 1962.

Recognition by industry of natural, protected deep water harbors along the Maine coast has added a third element to the equation. Everyone in this room is familiar with the discussions which have taken place during the last eighteen months regarding a proposed oil refinery in eastern Maine. Several oil producers and carrier companies have indicated an interest in locating facilities along the Maine coast. Construction of an offloading facility and oil tank farm has been started. Shipbuilding facilities are being enlarged and other industrial activity is taking place on or near the coast. Several proposals for major industrial diversification complexes are being reviewed at the present time.

The common development of recreation areas on the one hand and large-scale industrial activity on the other frequently cause conflict and agitation along the coastal zone. It is our feeling, however, that these two developments can be complementary to one another. It does require state and local officials as well as the federal agencies work to insure that such a marriage of hard industry and recreation can be a happy one.

Under the direction of Governor Curtis, several state agencies have begun investigating ways of developing a compatible coastal economy. A Governor's Task Force on the Environment, a Coastal Zone planning commission, as well as several local pollution control committees are already in operation. These commissions and committees are meeting monthly examining the problem of these competitive forces. Recent legislation passed by the 104th Maine Legislature established an Environmental Improvement Commission with specific responsibilities to oversee the controlled development of the coast. A planned reorganization of Maine State Government will also consider the problem of coastal development.

My responsibilities are primarily concerned with economic development, recognizing, however, the absolute necessity for maintaining a helpful environment for the people living and working in that economy. We have an *income gap* in the State of Maine which is very real and which is widening at an alarming rate. The tax revenue loss from this lower annual income alone is more than equal to what will be obtained from a new State income tax which was required to be passed by the lawmakers in the last session.

The citizens of Maine cannot continue to accept the role as the 'Rest and Rehabilitation Area' for the rest of the East Coast. We must broaden our economic base through major industrial developments; in particular, those along the coast.



The dichotomy of this discussion is apparent. We must improve our economy, thus closing the income gap, but do it in such a way that the environment we all cherish will not be destroyed. The solution of this dichotomy will require time, effort and a considerable amount of money. Our position is quite clear. We recognize the need, immediately, for institution of some strong authority for the planning and development of our coast. We would not wish to wait for five or ten years or even three years for action in this area. With some federal assistance, we can do the planning work and with a larger federal grant program in a year or two we can implement this plan.

I wish to submit some specific recommendations to be considered by the Congress when legislation for Coastal Administration is drafted.

1. That the time frame for planning, implementation and administration of a Coastal Zone Authority be telescoped to full operation for four years from now.

2. This requires immediate funding for Coastal planning from this session of the Congress. At least \$5 million is necessary for this part of the job.

3. Block Grants for administration of an Authority and for essential "greenbelt" land acquisition.

4. Recognition of the capacity of the individual states to maintain an effective Coastal Authority as a state agency, with initial federal support.

5. That the coastal states be given more territorial jurisdiction of the offshore physical and mineral resources. The present three-mile jurisdictional limit offers slight economic potential to the coastal state, but much of the trouble of marine resource development—pollution, drifting populations, loss of land area, etc. State jurisdiction must be extended seaward to a more realistic limit.

6. That marine research and data acquisition be stimulated by larger and more effective support of designated state institutions and laboratories. The Coastal Laboratory Proposal in the *Stratton Report* must have immediate implementation.

I have included with this brief statement a three-page report on the economic condition of the seven capital counties of Maine. This will provide a statistical background to my remarks.

Thank you Chairman Lennon for the opportunity to appear and speak before this committee. I would be happy to answer any questions which the committee might have.

## MAINE COASTAL DEVELOPMENT PLAN—WORK PROGRAM—MAINE STATE PLANNING OFFICE, OCTOBER 1969

### I. NEED

This proposal is presented as a top-priority project for the State Planning Office as part of its statewide planning responsibility. There is an obvious and urgent need for such a plan to assure sound and orderly development as a means to conserve one of Maine's greatest assets, its coastal resources. Moreover, public concern and interest over the protection of these coastal resources has increased rapidly during the past year. At present, it would be very difficult to conceive of a more timely or important planning project in such a vital development area for the State of Maine.

As a demonstration planning project, its findings and recommendations would serve the entire nation as well as Maine. Coastal areas on our seacoast promise to be the scene of great and immediate development activity throughout the nation. These areas will be subject to increasing demands because of the present and future concentration of population and economic activity on long stretches of our seacoast.

This state is now experiencing unprecedented demands for use of its coastal resources. Commercial developers, land speculators, industrial concerns, conservationists and recreationists along with many other interests are in competition for the use of Maine's coastal areas. The need, therefore, for a Coastal Development Plan to guide the use of our coastal resources is immediate and well-established.

### II. PURPOSE

The ultimate task and purpose of the project will be the preparation of a comprehensive development plan for the coastal area of Maine. Although there is some variation in the context of comprehensive plans, this plan will place special emphasis on a land classification system with development standards to be

applied to specific areas. This classification system will be designed to permit adoption and enforcement of land-use controls by appropriate local, state and federal levels of government to guide sound development practices by both private enterprise and public agencies. Necessary state legislation and local ordinances will be recommended, along with financing proposals and administrative arrangements. Background information on transportation, population, community plans and individual state goals would be included in the plan documents.

Special attention will be given to water use along with the traditional concern of planners with land use. An attempt should be made to relate proper land use to increasing water use and deal with the problems involved in the regulation of offshore activities. Among other subjects, this task would include defining regulations needed to control mineral exploitation such as gas and oil deposits, establish an adequate information base and scientific approach for conservation laws, deal with the problems arising from marine recreation, consider navigational limitations and port development, and finally, consider in detail the overall pollution problem in relation to recreational, commercial and industrial development. The object of this aspect of the study will be to make compatible through planning and regulation many of the present incompatible uses of water and land along our coastal areas.

### III. REGIONAL DEVELOPMENT STRATEGY

The Maine coast will also serve as a pilot program for development of a cooperative State-Federal coastal zone plan and action program. The State will prepare a plan for coastal development and management considering State, regional and national needs and objectives as the first phase of the effort. Following preparation of the State development plan, the second phase of the program will be initiated with Federal and State agencies preparing action plans for carrying out public sector responsibilities.

The New England River Basins will provide coordinated regional and national inputs to the study developed with Federal and State agencies, and will work with the State of Maine in shaping the plan. In addition, the Commission will hold a conference focusing on the New England coastal zone and its problems. The Commission will publish a report resulting from the conference and including a framework for additional action in the coastal zone. The report might be titled "Outlook for the New England Coast."

### IV. TENTATIVE TIME SCHEDULE

#### *1969 (October 15-December 31)*

This time period will be devoted to determining who should participate, the nature and scope of their contribution, how various capabilities and inputs may be integrated for optimal results, and the preparation of a detailed schedule of events. This time period would also be directed toward establishing study procedures and methodology. This would include the following tasks:

An inter-agency Coastal Planning Advisory Task Force of State agencies will be formed as a working unit to assist in the preparation of the plan.

Preliminary goals and objectives will be established so that those participating organizations may be better coordinated and related in their day-to-day activities.

An inventory and analysis of existing studies, public and private, related to the plan with special emphasis on State, regional and local planning groups, will be conducted.

Procedures and coordinating activities and techniques will be established. A critical path scheduled will be prepared to illustrate the sequential relationships of major activities relating to preparation of the plan.

Determine the capabilities of each participating State, Federal, regional, local and private agency in their contribution to the formulation of the plan.

Liaison and working relationships with regional, State, Federal agencies, and private groups will be established.

#### *1970*

The year will be devoted to gathering and compiling basic data and to develop procedures for establishing an initial inventory and classification system. An examination and evaluation of inter-agency and public-private coordination would be conducted with an objective of creating an effective planning partner-

ship and coordinating machinery to establish regulation and controls for water and land use in the coastal zone. This will include the following activities:

Define the coastal zone to be studied.

Develop the procedures and content of a coastal resource and land-use inventory and classification system.

Prepare a basic inventory of the natural and land-use characteristics of the Maine Coast. (Mapping)

Compile data concerning the physical type use and ownership use of natural resources.

Determine coastal land and water use trends.

Classify coastal resources based upon their natural characteristics, ecological relationship and land-use features.

*Publish an interim plan.*

1971

Conduct public hearings and utilize other means of eliciting the views of interested parties on the interim plan.

Revise the interim plan on the basis of public reaction and additional information.

Identify major land-use conflicts and indicate priorities for immediate action. Evaluate the environmental impact of existing and anticipated demands for the use of coastal resources.

Propose action relative to priority needs and future trends.

Propose regulations and controls to insure that coastal resources will be used consistent with their natural character and ecological relationships.

*A final comprehensive coastal development plan will be published late in 1971.*

1972

Propose institution arrangements for implementation and enforcement action. Propose State legislation and local ordinances necessary to implement the coastal development plan.

Conduct detailed planning on immediate action programs with the necessary authorities.

Prepare a detailed State-Federal-Regional Program for coordinated action throughout the New England Region.

---

STATE OF OHIO,  
DEPARTMENT OF NATURAL RESOURCES,  
Columbus, October 31, 1969.

HON. CHARLES A. MOSHER,  
Rayburn House Office Building,  
Washington, D.C.

DEAR CONGRESSMAN MOSHER: Jack Frost was telling me about your interest in having additional viewpoints expressed in reference to the coastal zone management discussions which were held by the Subcommittee on Oceanography of the House Committee on Merchant Marine and Fisheries in Washington this week. I am enclosing a copy of a talk I gave at Salt Lake City before state and federal water officials arranged by the Water Resources Council and the Interstate Conference on Water Problems, which was devoted almost entirely to this subject. It may contain some helpful thoughts.

We do appreciate your efforts on this entire program and your concern that Ohio be represented at the hearings.

Sincerely,

FRED E. MORR, *Director.*

COMMENTS OF FRED E. MORR, DIRECTOR, OHIO DEPARTMENT OF NATURAL RESOURCES, AND VICE CHAIRMAN, GREAT LAKES BASIN COMMISSION, AT THIRD ANNUAL CONFERENCE OF STATE AND FEDERAL WATER OFFICIALS, SALT LAKE CITY, JUNE 23-25, 1969, ON THE REPORT "OUR NATION AND THE SEA," BY THE COMMISSION ON MARINE SCIENCE, ENGINEERING, AND RESOURCES

I appreciate this opportunity to appear before you today. There are increasing needs for the states and federal agencies involved in water management to get together with cooperating interests to discuss problems, generate thought, develop understanding, and to get capsule reports of major situations. Both the



Water Resources Council and the Interstate Conference on Water Problems are to be congratulated for arranging such a conference. It will be a stimulating opportunity.

I will certainly not presume to stand before you to discuss with finality a subject of such vastness as the sea, whose very size and importance to mankind is awesome.

As vice chairman of the Great Lakes Basin Commission, I am afforded a rare partnership with seven other Great Lakes states. As their representative, I must report that time has not permitted the states to give adequate review, nor to develop a consensus of ideas, opinions, or comments on the report. However, because of the general structure and purpose of the Great Lakes Basin Commission, I can look at the report as it concerns that relationship.

"Our Nation and the Sea" is a stimulating report. It is excellent. It is well written, and it certainly has broad coverage. Because this subject is so vital to all of us, I would hope that the report might be condensed, embellished with further illustrations, and printed into a low-cost paperback edition for more widespread distribution. Because, to do something about a problem, people have to understand it, discuss it, mold it, and then do something about it. Communication, then, is very important.

As I read the report, it quite obviously deals with two major water areas—the oceans and the Great Lakes. So much of the original intent of the marine study was pointed toward the oceans, that the major study and its proposals are significantly aimed at them. Fitting such a concept equally to the Great Lakes, where the geographic, physical, political, and institutional arrangements are so sharply different, will bring the total report under fuller scrutiny and debate.

The Great Lakes shorelines (U.S. portion) represent about one tenth of the nation's shorelines. However, the Midwest region which these shorelines serve, has about 4% of U.S. area, 17% of the population, and produces close to half the nation's taxes.

The coastal zone is a seaward and a landward area. The seaward area includes such activities as fisheries, pollution abatement, aquaculture, oil and mineral exploration, and navigation. The landward area includes shoreline development, shore erosion, recreation uses, watershed and stream systems contributing to water levels and pollution. Under this definition of the coastal zone as touched in this report, you can begin to appreciate the magnitude of the report and its implication in reference to planning, regulation, management, and development, of what is described as a coastal line resource. The coastal zone for the Ohio portion of Lake Erie, for example, would vary from 30 miles to 100 miles, and cover about one third of the state. The report recommends the establishment of coastal zone authorities for the purpose of planning, regulating, acquiring and developing.

These are familiar words to all of us. These same functions are also placed in numerous state and federal agencies, as well as in local governments. A new overlapping coastal zone authority in any area couldn't easily superimpose itself over all other entities without multiplying the confusion.

The Marine Commission has recognized in first priority the need for curbing the inflow of pollutants into the Great Lakes by stringent enforcement and accelerated expenditures for waste treatment facilities. However, it goes on to point out that it is important to vigorously explore for new methods of feasibility in restoring the quality of some of the nation's most seriously damaged waters. In recognizing the very great degree of pollution, the commission also pointed up a need for careful analysis which must precede financial commitment of such great magnitude. It was therefore concluded that because of the national importance of the Great Lakes, a National Project be created to assess the feasibility of restoration techniques of such a program for one of the lakes. In view of the voluminous headlines and concern about the pollution of Lake Erie, I would certainly be the first to nominate Lake Erie for such a national project as proposed by the Marine Commission. However, no less recognized authorities than the International Joint Commission and Federal Water Pollution Control Administration have already made studies in depth of the pollution problems of the Great Lakes, and the programs recommended in them need to be *implemented*.

What we have is a great deficiency of federal funds to implement existing programs and plans. There has been great lip service—very little cash.

We also need a well directed crash program of research to find bold and imaginative low cost ways to clean up pollution.

As I read "Our Nation and the Sea," I was reminded of the very pleasant

experience I had a year ago last May to attend as a representative of the Great Lakes Basin Commission the International Symposium on Large Lakes at Uppsala, Sweden, under the sponsorship of the Organization for Economic Co-operation and Development. The purpose of the conference was to study the development of the scientific knowledge required for the management of large lakes considered as an integral part of a larger water resource system.

A number of case studies of large lakes was presented and intensely discussed. The extent of the present knowledge of these lakes was of major interest, and there was strong difference of opinion on the meaning of water quality. I believe that several of the recommendations which emerged from the Uppsala Symposium could have enriched the Marine Commission report.

For example on basic considerations:

1. There is need for *improved communication* of the results of research to *management* and the *translation* of this research into *effective programs*.

2. The kinds of new research needed should be separated into priorities—that needed for immediate action and that for long term.

3. Management must define its requirement of the scientists in precise terms.

4. On specific ideas, here were a few from Uppsala: "Any stream water quality standards now set should be quite tentative and re-examined regularly. New technology is changing management needs daily."

5. Any mention of water quality should be prefixed with indication of use for which water quality is intended. Quality for one purpose is meaningless for another purpose.

There are a number of sections of the report which are of concern to us. First is the recommendation of establishment of coastal zone authorities. These authorities would be created by the States. Their principal purposes would be to plan and regulate land and water uses and to acquire and develop land in the coastal zone.

I feel that this proposal would have difficulty, in its present concept, in obtaining enthusiastic reception by the States of the Great Lakes region. Most States already possess the regulatory machinery proposed and any new layering of agencies at this level would have a difficult journey to success. In addition, the coordination of programs visualized for the coastal authorities is perhaps already being approached.

Because of the acceleration of problems of the Great Lakes, the States and the federal agencies have formed the Great Lakes Basin Commission to guide the development of the lakes via planning on a partnership basis. This is a young organization; in fact, it had not even emerged at the time the marine study was started. However, we feel great progress can be made through this existing arrangement, and we are apprehensive that the creation of yet another agency with overlapping powers and inevitably limited funds would only confuse and constrain progress now being made. Time is critical if we are to preserve the lakes. We agree with the goals of the Marine Sciences Commission regarding the Great Lakes, but feel the institutional vehicle for achieving these goals has already been formed and is now functioning. Private industry, conservation groups, municipalities, port authorities, and appropriate state and federal agencies are represented in the Great Lakes Basin Commission, or its task forces.

Federal agency representatives include the Departments of Agriculture, Army, Commerce, Health, Education and Welfare, Housing and Urban Development, Interior, Justice, Transportation, and the Federal Power Commission. State members include Ohio, Minnesota, Michigan, Wisconsin, Illinois, Indiana, Pennsylvania, and New York.

The overall coordination of the Basin Commission in policy, state and federal planning fund sharing, and the establishment of priorities for project and program development is provided by the Water Resources Council. Through this chain, Congress and the President receive well organized and vital recommendations on critical needs.

At present, the Great Lakes Basin Commission is working on a framework plan. Twenty-six different work groups have been established—each containing federal, state, and other representatives. Some of the work groups which are similar to the study projects recommended in the Marine Commission report include: limnology of lakes and embayments, water quality, fish, navigation, lake levels and flows, shore use and erosion, land use, recreation, and plan formulation. The Great Lakes Basin Commission framework study is scheduled to be completed in 1972.



There are indeed legal institutional impediments to getting the job done on the lakes. Some are serious, but none will be solved by the creation of additional state and federal agencies.

The Marine Commission's recommendation that financial grant approval be conditioned upon the states formation of such a coastal zone authority might easily become an obstacle to a harmonious state-federal relationship. This particular recommendation does not seem oriented towards solving actual program needs as we would feel it should.

We feel that the basin commission, because of its broad membership, offers a far more effective vehicle than would be gained by creation of state coastal zone authorities.

Certainly I would be the first to recognize whether or not existing implemented programs are fully meeting the needs of the Great Lakes area. They are not. We are deeply concerned with inadequate progress being made on limnological research, shore erosion control, shore line management, pollution control, silt problems, recreational development, and preservation of scenic areas. Inadequate and timid management goals and policies for the development and use of the lake are also hang-ups we are painfully aware of—perhaps conditioned by inadequate funds.

These are matters which the state and federal governments must face clearly around the conference table. But I hasten to assure you that the conference table does exist, and as long as it has its legs well shored up, we see no institutional impediments to using it.

What we need most are:

(A) A clear policy for the use and development of the Great Lakes.

(B) More money.

Dollars have come painfully slow to many of the states. But that trend is changing dynamically. Large water bond issues have been passed by several states. There is a new and forceful program of state water planning, aided by the grant program of the Water Resources Council. In Ohio, we have completed a \$300 million long range plan for Northwest Ohio are spending large sums to implement it. I am convinced that federal grant programs—*backed up with money to the states*—not authorizations, or new agencies—will accelerate this tempo even more.

My reason for citing a hesitancy about accepting the Marine Commission's recommendation for institutional changes on water management responsibilities is that it only deals with one portion of our water effort. Experience has painfully demonstrated that you can't effect a piecemeal reorganization of water resources agencies without compounding and opening a Pandora's Box to many other problems. I would hope that the studies of the National Water Commission might suggest new structuring—if there is to be any—but in doing so, provide a total approach to the total water management picture.

I would also hope that a more specific definition of the coastal zone concept be considered, or this whole section of the Marine Commission report will lose an opportunity in providing objective direction to the more pressing needs of ocean marine resource development and deny a more flexible institutional approach.

In the meantime, I do see opportunity as an ultimate outcome of such study for a consideration of the creation of a national oceanic agency as a broad policy planning and fund-granting agency. It would seem that it could prosper by co-ordination through the Water Resources Council. It could possibly function somewhat in that manner of Bureau of Outdoor Recreation, making grants for projects, working through and with existing agencies, and reporting periodically to the Water Resources Council and to the President and Congress. It could be responsible for a national ocean marine plan, and continually update it and bring in sharp focus the priority problems and recommend solutions. With this part of the report "Our Nation and the Sea." I concur heartily, for here we have a freshness of approach; we have an agency unfettered by commitments to the past and in a position to pinpoint needs for research and programs, to stimulate the training of marine scientists, and to set up a grant program so that the funding of this effort can be realistic and purposeful.

In this role, I feel that a national oceanic agency could stimulate a much greater community of effort through its association with all levels of government and interests.

In the area of natural resources management, I have felt we possess the minds and souls, but have lacked public understanding and fiscal application toward meeting yesterday's failures, today's needs and tomorrow's goals.



## BISCAYNE BAY AS A NATURAL RESOURCE

(An address before the Zoological Society of Florida, October 6, 1969, by Dr. Harris B. Stewart, Jr., Director of ESSA's Atlantic Oceanographic and Meteorological Laboratories, Miami, Fla.)

Biscayne Bay is a beautiful, busy, bountiful, and booming bay. It extends some forty miles along the southeast Florida coast from Dumfounding Bay and the Interama site on the north to Card Sound and Arsenicker Keys on the south. On the west it is bounded by expensive homes, a busy port, the heart of a major city, more homes, public beaches, and a long stretch of red and black mangroves. On the east, Biscayne Bay is bounded by the wall-to-wall hotels and condominiums of Miami Beach, by Virginia Key and Key Biscayne, and by the string of beautiful keys from Soldier Key on the north through Ragged Keys, Sand Key, and Elliott Key, to Totten and Old Rhodes Keys at the south end of Biscayne Bay. I have come to know the bay intimately only during the past two years, but I have come to love it. Because I love it, I am terribly concerned for its future; for its future is our future, is Dade County's future. I predict in all confidence that if we, the people, allow the overall use of our bay to continue to develop unplanned as it has for the past forty years, our children and grandchildren will be living with an unattractive, azoic, concrete bounded, open cesspool. This is not an exaggeration. Boston Harbor two hundreds years ago was one of the truly beautiful estuaries in America, and the early accounts of New York harbor and the Hudson River estuary are beautiful to read. But look at these harbors today! And look at Baltimore Harbor, look at the Potomac River at Washington, look at Norfolk and Charleston harbors. You have seen them, you know what I am talking about without my having to go into details of open sewers, oily waters, no swimming, no fishing, unsafe boating, and waterfront areas of rotted piers and slums. We have not reached this stage yet, but only because we are younger. Give us time and the same disinterest, and we will be just like all the others. It is a slow and inexorable process nurtured by the selfish interest of short-sighted man himself. If the process continues unchecked here, the end result will be the same. It is only through the actions of man that the process continues, so it must be through the actions of man—albeit more enlightened man—that the process can be checked.

Before going any farther, I would like to set some groundrules establish what the physicists call the boundary conditions. First, although I am a federal civil servant, I left my ESSA hat out in the lobby and am speaking tonight only as a concerned Dade County oceanographer and a member of our Zoological Society of Florida. Secondly, I would like to establish in your minds my own personal position on "conservation", for the militant conservationist—even the quiet conservationist—plays a major role in what I call the Biscayne Bay syndrome. Of all the endangered species, I consider *Homo sapiens* as the most important. Wildlife refuges should be established and maintained inviolate—not for the animals themselves, but so that *man* can enjoy them, so that *man* can know that they still exist in their natural habitat and derive pleasure therefrom. Mine is a man-oriented view of conservation. When it comes to Biscayne Bay, I consider conservation of the natural environment as one of many uses to which the bay will be put, one of the many conflicting and multiple uses of the bay. It is not the *ne plus ultra* that many would consider it, but rather it is one more of the many uses, and it must be carefully balanced with the other demands when value judgments on the utilization of this resource are being considered. "Conservation", like "motherhood", has to many become an inviolate concept. I can think of nothing worse for the world than unrestricted motherhood. Overpopulation is probably the greatest problem facing mankind today. Conservation should be put in the same category. It should be looked at objectively, dispassionately, and stripped of the unenlightened blind emotionalism with which it is too often associated. A third boundary condition is my own personal bias—prejudice, if you will. I happen to love Biscayne Bay and want to see its use go for the greatest possible good for the greatest number of people.

Tonight I would like to outline briefly the problems that if unsolved will eventually result in the destruction of Biscayne Bay as probably our greatest natural resource in Dade County. I will also offer what I consider the best present solution to this problem. It is a major problem and will take a major solution. It is a problem created by the actions of people, and it will take the action of people to solve it.

The present problem with Biscayne Bay, the same problem that has gone unresolved in most of the other bays along our Atlantic seaboard, is that the bay is what the resource economists call a "resource held in common" and one on which there are many—and often conflicting—demands. Let me give you some examples of these conflicting uses. If the pleasure-boat operators prefer not to have holding tanks for sewage on their boats but to use the bay as a convenient sewer, those who like to swim can not use for our marina slips where people live on boats as areas for swimming. If you doubt me, look over the side of the piers at any of the big marinas on Biscayne Bay. If you elect to have a big area set aside as a National Monument, you can't expect to build hotels, homes, and condominiums there. If you want to save all the red mangroves, you can't dredge and fill the area for an industrial seaport. If you want a causeway to join up a few islands, you can't sail through it. If you want to aside an area for mariculture, you can't water-ski through it. If you want the power required for a fast-growing metropolitan area and use bay-water to cool the generating equipment, you must be prepared to have some warm water put back into the bay. If you don't feel up to paying for proper sewage treatment, the bay is an economical toilet that flushes itself in a half-hearted way twice a day, but swimming, fishing, and the aesthetic resource may suffer. A thriving industrial seaport is important to the economic base of the community, but this involves dredging and filling and getting rid of the spoil. If spoil is spread over the shallows where many of our commercial and sport fish spend at least part of their life cycles, then these nursery grounds diminish and the fish population diminishes accordingly. If you want to live on the water you may have to bulkhead and fill in some of the mangrove areas. If you want to dump raw sewage, you can't swim. If you want to preserve the whole bay in its pristine condition, you can't do anything at all, and so it goes. These, then, are the problems related to the multiple and often conflicting uses of Biscayne Bay.

I would like to take a look at one of these conflicting uses of the bay in some detail. One of the great resources of Biscayne Bay may in fact be that it is a big hole in the ground, a self-flushing system, and a fine place to get rid of the waste material that we do not want to live with on land. You can spit in the bay, and the bay will probably never know the difference. Two people, a hundred people, could do the same, and the bay would still be essentially unpolluted. So the question is not "yes" or "no," but rather, "how much" of "what", "where", and "when", and "for how long". Answers to these questions have not been attempted, so the normal course of action by inconsiderate man is just to keep on pouring the waste materials into the bay until the effects become so bad that man himself objects to the results and tries to clean it up. Usually by that time it is too late, the reaction is an irreversible one, and one more bay becomes useful only as an open sewer. This certainly is one use to which the bay *can* be put, but I doubt that we are willing to pay the social price for using Biscayne Bay uniquely used for getting rid of our municipal and industrial wastes.

We are, however, well along on just that road. I understand from Dr. William Fogarty of the University of Miami that of Dade County's 90-plus sewage treatment plants, less than five were putting out what is termed "acceptable effluent" during a recent inspection. I might add, parenthetically, that the big City of Miami treatment plant on Virginia Key is one of the best. If you fly over the offshore outfall discharge area and look down, you will see that the water coming out of the outfall is actually cleaner and clearer than the brownish bay water coming out of Government Cut. I also understand from Dr. Fogarty that Snake Creek, Snapper Creek, and the Coral Gables Waterways are too polluted even for swimming. But let me put some numbers on this. Sanitary engineers use as one measure of pollution what they call the "most probable number" or MPN. This refers to the number of enteric organisms—human origin—in a water sample. The upper limit for "safe" swimming is an MPN of about 1000. Dr. Fogarty has routinely measured 16,000 in Coral Gables, in Snapper Creek, and in Snake Creek—sixteen times the upper safe limit—not for drinking, but just for swimming. Near one point of discharge from a treatment plant, he measured an MPN of 16 million, or 16 thousand times the upper safe swimming limit! Fishkills have been reported in the local press, and a boat trip up any of these waterways will prove that the situation is bad. There are those in the local government who are working hard to correct this. There are good pollution control laws on the books—some of the best in the nation—but unless they can be enforced, they are of little use, and the effluent continues to pour into our once beautiful creeks and waterways and eventually into Biscayne Bay. When did you last go swimming



in the Miami River? There are those in the city today who can remember when the swimming in that river was great.

The spectre of pollution hangs over Biscayne Bay, and I maintain that the major reason is voter apathy. "The County should do something" is the recurring cry, but YOU are the County. These are your waterways, your creeks and rivers, your bay. Pinellas County is now some 90 per cent sewered. It happened in a relatively short time, and it happened only because the people were willing to become involved. I must admit, however, that the real driving force there was the women. County officials were elected or defeated on the basis of their stand on this one issue. Bond issues were pushed and voted through. They got what they felt was needed, but only by becoming involved, working for what they needed, and seeing that it was accomplished. We can do this in Dade County. It will take a lot of work by a lot of dedicated people, but it can be done if the people will rise up *en mass* and demand that it be accomplished. The Zoological Society of Florida can and should play an important role in this "popular uprising".

Getting rid of the wastes of a busy metropolitan complex is just one of the many and conflicting uses to which our bay is being put. The thermal effects of the Turkey Point power plant coolant water discharge is—both literally and figuratively—a "hot" issue right now. You notice that I say "thermal effects" rather than the more popular term "thermal pollution", for my contention is that until we know exactly what the effects are, we are pre-judging the case by calling it "pollution". This use of the bay is another conflicting use. A new seaport has recently been proposed for southern Dade County, and a study by the Bechtel Corp. has been released. A bridge-causeway joining Fisher Island to Virginia Key has long been in the planning stages, and the recently announced plans for the development of Fisher Island have brought this plan to the forefront again. The New Port of Miami has a 25-year development plan that calls for eventual use of Lumas Island as the eastward extension of the Port. The deepening of the ship channel to Dodge Island has long been pushed as a needed improvement. The location of the bulkhead line is still in contention. A large National Monument for the southern part of Biscayne Bay is well along on the road to realization. The City and County have this spring agreed to set aside some 162 acres on Virginia Key as a marine science park, and this will include the dredging of a channel into an oceanographic small-boat marina north of the Marine Stadium. The new Miamarina at the north end of Bayfront Park is nearing completion. The bulkheading of the south side of Dodge Island is on the books, and I am sure that there are other plans afoot for Biscayne Bay about which I do not know. The point here is that things are happening in Biscayne Bay. They will continue to happen. Change is not bad *per se*, but haphazard changes to Biscayne Bay carried out within the present framework for effecting such changes could be disastrous. As of today, dictated primarily by the unenlightened apathy of the residents of Dade County, the use of the bay will continue to go to the group with the most money, the most political "pull", or the group that shouts the loudest. It could result in anything but what I like to call "the greatest good for the greatest number of people."

Let me assume that the problem has been adequately stated, that you realize that unless something is done a great natural resource will little by little be whittled away until it becomes a liability rather than a great natural asset. The question then becomes "What can be done about it?"

I would like to approach answering this question in two ways. First, what has happened elsewhere and what is being done at the Federal level; and secondly, what should we do here in Dade County.

San Francisco Bay is farther down the road than we are here, so a look at San Francisco Bay today may well be a look at Biscayne Bay in the future. What has happened there? In the mid-nineteenth century San Francisco Bay with its marshlands covered some 680 square miles. Extensive bulkheading and filling has reduced this to little more than 400 square miles today. Of the 280 miles of shoreline, only about ten miles are open for public access. The boundary lines of nine counties and 32 cities extend into the bay, about 22 per cent of the bay has been sold by the state into private ownership (mainly the shallow areas where filling is easiest), and 23 per cent has been granted by the state to cities and counties—generally with filling in mind. In brief, the bay was steadily being used up, the pollution was bad and getting worse, and the bay itself was under the control of an incredible number of separate jurisdiction and private ownerships. California did two things. It appointed a San Francisco Bay Conservation and Development Commission—an interesting juxtaposition of two terms that are so often in dire



conflict—and a San Francisco Bay-Delta Water Quality Control Program. The San Francisco Bay Plan has recently been published, and it is a truly fine document. Even now the State is working out the methods whereby this plan might be implemented. But San Francisco waited until it was too late—or almost too late. We here still have time—but not much!

At the Federal level, Management of the Coastal Zone has popped to the surface in Washington circles as the major marine problem with which this country is now faced. Although various agencies, groups, organizations, panels, committees, and individuals have long been preaching the importance of the coastal zone, it took an adroitly worded report to bring the whole effort into proper focus. Public Law 89-454 authorized in 1966 the establishment of a Commission on Marine Science, Engineering and Resources. The President appointed a distinguished Commission under the Chairmanship of Dr. Julius Stratton, Chairman of the Ford Foundation. Their extremely thoughtful, technically sound, and nationally relevant report entitled *Our Nation and the Sea* was published last January and received wide acclaim. Chapter 3 of the main volume is entitled "Management of the Coastal Zone" and presents a succinct summary of the more detailed report of the Panel on Management and Development of the Coastal Zone. This latter report, contained in Volume I of the published Panel Reports of the Commission, should be read by everyone concerned in any way with the problems of the coastal zone. The response to this report has been broad-based and enthusiastic. Senators Magnuson of Washington and Hart of Michigan have recently introduced Senate Bill 2802 known as the Coastal Zone Management Act of 1969 which would encourage through federal support the establishment of Coastal Zone Authorities at the State level. On the 28th and 29th of this month the House Merchant Marine and Fisheries Committee is holding a series of panel discussions on the problems of the coastal zone and the need for such Coastal Zone Authorities. So the Federal government is concerned, is involved, and can be looked to for support for locally-generated initiatives.

Finally, what should we be doing here? Presently we are doing very little. Local conservationists are tooling up to shoot down any attempts to get a new seaport in South Dade County. People are beginning to listen to Dr. Fogarty, Paul Leach, and others who are screaming about our levels of pollution. Florida Power and Light is fighting for some means to cool its Turkey Point generators, and the problems related to land acquisition for the Biscayne National Monument are far from solved. But there is no overall Biscayne Bay Plan, no Biscayne Bay Policy Board, and very little concern for Biscayne Bay as a total physical, biological, ecosystem. The one exception here is the University of Miami's Institute of Marine Sciences of its newly-formed School of Marine and Atmospheric Sciences. Operating with funding from the Sea Grant College Program administered by the National Science Foundation, the Institute of Marine Sciences is preparing for a complete study of Biscayne Bay.

Therefore, my first recommendation for preventing the total destruction of Biscayne Bay is based on the valid assumption that in order to make truly meaningful value judgments on the future use of the bay, we must first understand how the bay works as a complex physical and biological system. To this end, there should be provided every available assistance to the University of Miami in its efforts to understand Biscayne Bay. The study should entail total community commitment. Local elements involved in any way should plan to work with the University. This would entail County and City planning Departments and other relevant local government agencies. It would entail the local representatives of State agencies, including the Department of Natural Resources, Department of Air and Water Pollution Control, Department of Community Affairs, the Commission on Marine Science and Technology, and the Board of Trustees of the Internal Improvement Trust Fund. At the Federal level, it would include the local representatives of the Federal Water Pollution Control Administration, Corps of Engineers, Coast Guard, Geological Survey, Bureau of Commercial Fisheries, Bureau of Sport Fisheries and Wildlife, and the Environmental Science Services Administration. But most important would be the many local people with particular involvement in Biscayne Bay. I am thinking of the developers, the conservationists, the sanitary engineers, the marine engineers, the lawyers, the fishermen (both sport and commercial), the boat manufacturers, the shipyard operators, and all the rest. The study must be primarily a scientific and technical study with the major amount of work being carried out by the appropriate scientists and technicians. However, to be truly meaningful, the study must be followed by a plan for the effective conservation and development of Biscayne Bay; and if this plan is to be at all meaningful, it must have the

involvement of all the various user groups I have just mentioned. Every user and potential user and every relevant agency (federal, state, and local) must be involved from the very beginning. Without this total community involvement, the study—no matter how good—may well receive the stigma of the 'I-wasn't-involved-so-it's-no-good' attitude that so often follows the publication of studies carried out by a single group. My first recommendation, then, is for the complete community involvement in a detailed study of Biscayne Bay as a total system. My second recommendation is for the formal establishment by the County Commission of a Biscayne Bay Conservation and Development Commission patterned after the successful San Francisco Bay Conservation and Development Commission. Let's be frank. The problem of the management of our coastal zone is a problem of national scope and importance. Something *will* be done about it. I personally feel that it is highly preferable to have this "something" initiated at the local level and in response to local requirements rather than to sit back until the State or the Federal government forces some program on us that may have little relevance to our own particular coastal zone problems. By the same token, the initiation of a local Biscayne Bay Conservation and Development Program would serve as a prototype of comparable programs elsewhere and could very possibly attract both State and Federal support for our efforts here.

As I said earlier, Biscayne Bay is a beautiful, busy, bountiful, and booming bay. If we want our major natural resource in Dade County to be something of which future generations can be proud, we must not wait until it is too late to do anything about it. The time is now. I would like to conclude with a quotation by Theodore Roosevelt: "The Nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased and not impaired in value. \* \* \* Conservation means development as much as it does protection."

---

#### OFFICE OF THE VICE PRESIDENT

WASHINGTON, D.C.

A five-point program to strengthen the Nation's marine science activities was announced today by Vice President Spiro T. Agnew, as Chairman of the National Council on Marine Resources and Engineering Development.

The Vice President reported five areas that the Administration has selected for immediate special emphasis in the next fiscal year pending development of a long-term program by the Administration and the Congress.

These areas are:

*Coastal Zone Management.*—A new Federal policy will be established to promote the rational development of coastal areas and the Great Lakes, with a grant program to aid States to plan and manage activities along the coast.

*Establishment of Coastal Laboratories.*—Coastal marine laboratories will be established to accelerate environmental research needed for effective management of coastal activities.

*Lake Restoration.*—A pilot technological study of lake pollution will be initiated to guide restoration of the Great Lakes.

*International Decade of Ocean Exploration.*—The United States will propose a range of specific programs as its initial contribution to the International Decade of Ocean Exploration during the 1970s.

*Arctic Environmental Research.*—Ocean-related research will be accelerated on the interaction of man with the Arctic environment.

The Vice President said that details of the program have been worked out with the approval of the White House.

Additional funding above current levels will be provided for implementing these programs. Primary responsibility for development of each program will be assigned to an appropriate Federal agency while studies of the Government's organization of marine science activities continue.

Selection of the five priority programs followed an intensive Government-wide review of urgent needs of the nation in relation to marine affairs. These particular needs cannot await the result of longer range studies, the Vice President said.

The study was requested by President Nixon in February following submission of the Report of the Commission on Marine Science, Engineering and Resources,

### *Our Nation and the Sea.*

The President's Advisory Council on Executive Organization, headed by Roy Ash, is now evaluating the Commission's recommendation to create a new National Oceanic and Atmospheric Agency. The Administration will also continue to evaluate other Commission recommendations, strengthen on-going programs, and seek improvement of Federal management of ocean programs. The President's task force on oceanography, headed by James H. Wakelin, Jr., will be of particular assistance in formulating the longer term goals of the national program.

The National Council on Marine Resources and Engineering Development was established at Congressional initiative by Public Law 89-454 to assist the President in the development and coordination of national marine science policies and programs. The Council membership is as follows:

Chairman: Spiro T. Agnew, the Vice President.

#### Members:

William P. Rogers, the Secretary of State.  
 John H. Chafee, the Secretary of the Navy.  
 Walter J. Hickel, the Secretary of the Interior.  
 Maurice H. Stans, the Secretary of Commerce.  
 Robert H. Finch, the Secretary of Health, Education, and Welfare.  
 John A. Volpe, the Secretary of Transportation.  
 Glenn T. Seaborg, Chairman, Atomic Energy Commission.  
 William D. McElroy, Director, National Science Foundation.

#### Observers:

Lee A. DuBridge, Director, Office of Science and Technology.  
 Robert P. Mayo, Director, Bureau of the Budget.  
 Paul W. McCracken, Chairman, Council of Economic Advisors.  
 Thomas O. Paine, Administrator, National Aeronautics and Space Administration.  
 John A. Hannah, Administrator, Agency for International Development.  
 S. Dillon Ripley, Secretary, Smithsonian Institution.

Executive Secretary: Edward Wenk, Jr.

#### DETAILS OF FIVE-POINT INTERIM MARINE SCIENCE PROGRAM

##### *1. Coastal Zone Management*

Legislative proposals will be submitted to the Congress to establish a national policy for the development of coastal areas and to authorize Federal grants, with matching State contributions, that will encourage and facilitate the establishment of State management authorities. Such legislation will assist to insure that rapid coastal development does not destroy limited coastal land and water resources and that all interests in the coastal regions would be assured consideration—for port development, navigation, commercial fishing, mineral exploitation, recreation, conservation, industrial development, housing, power generation and waste disposal.

Grants are anticipated for (1) initial development by States of planning and regulatory mechanisms; and (2) operation of the State management systems that are developed. The latter grants would be made contingent on a State demonstrating a capability to prepare plans that provide for—

- balanced use of the coastal margin, both land and water, that considers viewpoints of all potential users;
- access to management-oriented research, including coastal ecology studies;
- regulatory authority as needed—such as zoning, easement, license, or permit arrangements—to insure that development is consistent with State plans;
- consideration of the interests of adjacent States;
- land acquisition and power of eminent domain as necessary for implementation of the plan; and
- review of proposed Federal, Federal-assisted, State and local projects to insure consistency with plans.

States have responsibility for management of coastal resources but have often lacked regulatory and management capabilities. They have been faced with a diversity of coastal jurisdictions and the absence of ecological information. This



program should thus strengthen the States' capabilities, lessen the need for Federal intervention, and facilitate integration of planning, conservation, and development programs among diverse public and private interests.

## 2. *Establishment of Coastal Laboratories*

Steps will be taken toward establishment of coastal laboratories, supported by the Federal Government, to provide information on resource development, water quality, and environmental factors to assist State authorities and others in coastal management. Existing facilities will be strengthened and consolidated as necessary to provide capabilities to—

- develop a basic understanding and description of the regionally-differentiated ecology of our 13,000-mile coastline;
- anticipate and assess the impact on the ecology of alternative land uses, of pollution, and of alterations to the land-water interfaces;
- operate coastal monitoring networks; and
- perform analyses needed for coastal management.

Establishment of these capabilities will be phased with the development of coastal management plans to foster State access to environmental data and research capabilities.

## 3. *Pilot Technological Study of Lake Restoration*

The feasibility of restoring the Great Lakes with technological as well as regulatory mechanisms will be determined by a pilot study of a lake of manageable size. Existing environmental technology and techniques will be tested, including pollution measuring devices, methods of artificial destratification by aeration, mixing and thermal upwelling techniques, thermal pollution control and enrichment, artificial bottom coating, filtering, harvesting of living plants and animals, and restocking of fishery resources. The program will reinforce current investigations, and bring together additional competence from industry, academic institutions, and Federal laboratories.

## 4. *International Decade of Ocean Exploration*

Funding will be provided for the U.S. contribution to the International Decade of Ocean Exploration during the 1970s, proposed by the United States and endorsed by the UN General Assembly in December 1968. The United States will propose international emphasis on the following goals:

- Preserve the ocean environment by accelerating scientific observations of the natural state of the ocean and its interactions with the coastal margin—to provide a basis for (a) assessing and predicting man-induced and natural modifications of the character of the oceans; (b) identifying damaging or irreversible effects of waste disposal at sea; and (c) comprehending the interaction of various levels of marine life to prevent depletion or extinction of valuable species as a result of man's activities;
- Improve environmental forecasting to reduce hazards to life and property and permit more efficient use of marine resources—by improving physical and mathematical models of the ocean and atmosphere which will provide the basis for increased accuracy, timeliness, and geographic precision of environmental forecasts;
- Expand seabed assessment activities to permit better management—domestically and internationally—of ocean mineral exploration and exploitation by acquiring needed knowledge of seabed topography, structure, physical and dynamic properties, and resource potential;
- Develop an ocean monitoring system to facilitate prediction of oceanographic and atmospheric conditions—through design and deployment of oceanographic data buoys and other remote sensing platforms;
- Improve worldwide data exchange through modernizing and standardizing national and international marine data collection, processing, and distribution;
- Accelerate Decade planning to increase opportunities for international sharing of responsibilities and costs for ocean exploration, and to assure better use of limited exploration resources.

This U.S. contribution to an expanded program of intergovernmental cooperation reflects four recent developments:

- (1) Increased population concentration along the coasts of the United States and other countries, with attendant threats of harmful degradation of the ocean environment, and increasing demands on the coastal margins and marine resources.

- (2) Evolution of technology that is rapidly opening new ocean frontiers.
- (3) Recent scientific advances that can improve environmental forecasts if better ocean data is available.
- (4) Sharply increasing interests by 100 coastal nations in extracting benefits from marine activities.

The Decade will accelerate needed understanding of the ocean—permitting nations individually to plan investments and collectively to develop arrangements for preserving the ocean environment and managing common ocean resources.

The global character of the oceans and the scope of work to be done make international cost-sharing and data exchange especially attractive. International cooperation in marine affairs is expected to facilitate communication with developing nations, with the Soviet Union, and with others.

The U.S. proposals are compatible with the framework of the expanded and long-term international program of ocean exploration recently developed by UNESCO's Intergovernmental Oceanographic Commission. The extent and nature of the U.S. contribution will depend on the contribution of other nations participating in this program.

### 5. Arctic Environmental Research

Arctic research activities will be intensified, both to permit fuller utilization of this rapidly developing area and to insure that such activities do not inadvertently degrade the Arctic environment.

The program will be directed to (1) the polar icepack including its impact on transportation and global weather and climate; (2) the polar magnetic field and its effects on communication; (3) geological structures underlying the Arctic lands and polar seas both as potential mineral sites and as hazards to construction and resource development; (4) balance of the Arctic eco-system; (5) the presence of permafrost; and (6) slow degradation of liquid and solid wastes under Arctic conditions. Behavior and physiology of man in this environment also will receive increased attention. Initial emphasis will be on strengthening and broadening Arctic research capabilities. Consideration will also be directed to formulating an overall policy framework for Arctic-related activities.

## A STUDY OF WATER AND RELATED LAND RESOURCES FOR SOUTHEASTERN NEW ENGLAND

[Revised May 1969]

### NEW ENGLAND RIVER BASINS COMMISSION

#### *The Southeastern New England Comprehensive Study*

A comprehensive action program to protect and develop water and related land resources of Southeastern New England will be developed by the New England River Basins Commission. (See inside back cover for a brochure describing the Commission and its function.) The "Southeastern New England Comprehensive Study" (SENE) will be launched as soon as Federal funds are available. The study will recommend action programs for management of rivers, bays, estuaries, lakes, ponds, underground waters and land resources related to water—watersheds, flood plains, wetlands, shorelines and beaches.

The study area includes the river basins and coastal areas of Eastern Massachusetts and Rhode Island and the Southeast corner of Connecticut, including such major regions as Boston Harbor, Cape Cod, Buzzards Bays and Narragansett Bay.

The SENE study will be carried out under the leadership of the New England River Basins Commission, a Federal-State agency. Natural resource agencies of Massachusetts, Rhode Island and Connecticut and eight Federal departments and agencies, will join in the project.

The study will recommend ways to meet needs for :

Adequate water supplies  
Water quality control  
Flood protection  
Control of erosion  
Navigation  
Watershed protection  
Fisheries and wildlife

Outdoor recreation  
Wise use of shorelines, wetlands and flood plains  
Protection and use of estuaries  
Scenic and natural area preservation  
Protection of environmental health and beauty

The study will recommend specific actions for the next 10-15 years, as steps in a long-range conservation program for the region. Recommendations will be addressed to the President and the Congress of the United States, to the States of Rhode Island, Massachusetts and Connecticut, to interstate agencies, to local governments and to private citizens and interests.

Recommended actions may include:

Acquisition and management of land and water areas for reservoir sites; navigation facilities; parks, beaches, and outdoor recreation; and fish and wildlife habitat.

Construction of facilities to control floods; store water supplies; treat water-borne wastes; and assure public enjoyment of outdoor recreation.

Improved land use—zoning, purchase of easements, etc. and encouragement to private interests to prevent unwise construction in flood plains; protect watersheds, aquifers and wetlands; maintain agricultural land uses; protect scenic views; maintain open spaces; and secure appropriate sites for commercial and industrial development.

#### *Why Another Study?*

A number of studies have been carried out or are underway in Narragansett Bay, Boston Harbor, Cape Cod and many rivers in Southeastern New England. What will another study add?

A primary purpose of the SENE Study is to develop a coordinated action program to make effective use of information already available or being generated by other studies.

Some of the ongoing studies which will serve as an integral segment of and provide significant input for the coordinated plan include:

<i>Study</i>	<i>Responsible agency</i>
Northeast Water Supply Study (NEWS) -----	Corps of Engineers.
North Atlantic Water Resources Study (NAR) -----	Corps of Engineers in cooperation with the New England River Basins Commission.
National Estuarine Pollution Study and National Estuary Study-----	Department of Interior.
New England water quality management studies-----	Department of Interior.
Charles River watershed study-----	Corps of Engineers.
Boston and Providence Harbor debris studies -----	Do.
Narragansett Bay and Pawcatuck River Basins flood control studies--	Do.
Massachusetts water resource development investigations-----	Massachusetts Division of Water Resources and Department of Agriculture.
Massachusetts and Rhode Island water resources information studies-----	Department of Interior with Commonwealth of Massachusetts and State of Rhode Island.
Regional planning programs-----	Central Massachusetts Regional Planning Commission.
	Central Merrimack Valley Regional Planning Commission.
	Metropolitan Area Planning Council.
	Old Colony Planning Council.
	Southeastern Massachusetts Regional Planning Commission.
	Cape Cod Planning and Economic Development Commission.
	Dukes County Planning and Economic Development Commission.
	Rhode Island Statewide Planning Program.
	Southeastern Connecticut Regional Planning Agency.



In addition to these studies, the SENE study will maximize the use of existing reports and plans. These would include the Massachusetts, Rhode Island and Connecticut outdoor recreation plans, Development Plan for the Water Supply Resources of Rhode Island, State public investment plans, economic base studies, fisheries resource management studies and flood protection, navigation, and water supply studies. In addition, numerous plans prepared by regional planning agencies will serve as a major component of the study.

Many research projects and studies underway or in process are designed to develop data, not to recommend specific action programs. Many other studies, while action-oriented, are focused on specific resource uses (water supply, or flood control, or fisheries management), or on limited geographic areas, or on action by a single level of government. The SENE study is designed to help local, State and Federal agencies and private interests act in concert on behalf of all uses of water and related land resources throughout the area.

The region, although small in area (4,600 sq. mi.) is densely populated, and major portions of the region are highly industrialized. Approximately 5 million people or 50 percent of the population of New England live in the area; by the year 2000 the population is expected to be 7 million.

There are many strong reasons for a regional approach to management of water and related land resources. Communities looking for expanded water supplies are likely to be in competition for the same sources of additional water. A number of areas in the region—including Cape Cod and Narragansett Bay—are prime tourist and recreation areas heavily used by people from other parts of New England and the nation. Navigation facilities, both commercial and recreational, serve the entire area. And floods, droughts, and pollution cross local and State boundaries.

The water and related lands of the area constitute a complex system of inter-related resources. The wise use of these resources—for economic growth and stability, for outdoor recreation, for their contributions to an attractive environment for living—requires coordinated planning and action.

#### *Cooperation Is Key*

The New England River Basins Commission is a partnership of Federal, State and interstate agencies which have authority to carry out action programs. Eight Federal agencies, six interstate agencies and seven States are represented on the Commission. The Governor of each member State designates a representative, assuring that the full resources of a variety of State agencies may be drawn upon.

The Commission provides a vehicle through which action agencies can join in planning action programs. The Commission does not do its planning in isolation from those agencies which can acquire and manage lands, or build, operate and maintain facilities.

In the SENE project, responsibility for major elements of the study will be borne by government agencies having responsibility and competence in certain fields. For instance, the Corps of Engineers will work with State and interstate agencies on planning for flood control, navigation improvement, beach erosion control and hurricane protection. The Bureau of Outdoor Recreation will work with State park and recreation agencies to identify outdoor recreation needs and opportunities for meeting them, and to recommend specific action by local, State, Federal and private agencies.

The New England River Basins Commission has established a Coordinating Group under the Chairmanship of Frank Gregg, the Commission's Chairman. A member of the Commission's staff, Walter M. Newman, serves as Executive Secretary of the Coordinating Group. Members of the Coordinating Group include representatives of Federal, State and interstate agencies.

The Coordinating Group is now preparing a detailed outline for carrying out the study. The plan of study will make specific assignments for portions of the study—flood damage reduction, outdoor recreation, water supply, water pollution control, fish and wildlife, environmental quality, etc. One agency has primary responsibility for each study element. The lead agency is assisted by a team of other agencies and individuals, including private, local, State and Federal representatives, to develop a coordinated program in its area of responsibility. Elements of the study are continuously reviewed by the Coordinating Group and the Commission, and will eventually be combined into a coordinated Commission report recommending an action program to secure the best use of all resources for all purposes.

A pivotal issue in the development and usefulness of the plan will be full

participation by Federal, State, interstate, regional, local and private agencies. If all participants use the study as a positive vehicle for concerted planning of their individual water and related land resource programs, the success and implementation of the plan is reasonably assured.

The impact of the study will be strongly influenced by the degree of participation by State agencies. Because the Commission is a Federal-State agency, the States are assured a strong voice in design and execution of the study. But effective resource management will require aggressive action by a number of agencies in each State, as well as action by Federal agencies. The Commission will urge State fish and wildlife and outdoor recreation agencies, for instance, to use the SENE study as a vehicle for planning their own programs—for getting the most out of these resources for the interests they represent. It should be emphasized that while Federal agencies have authority for a number of specific programs—such as construction of dams and reservoirs, local flood protection projects, navigation improvements, beach erosion control, and preservation of outstanding areas as national parks or wildlife refuges—most of the actions which will have to be taken to conserve and develop water and related land resources are the responsibility of State and local governments, and private individuals, businesses and other private institutions.

Fully effective participation by each State will require coordination among State agencies somewhat comparable to the coordination among Federal agencies achieved their membership on the Commission. Each State may wish to consider establishing an internal coordinating body to make certain that all State agencies will be effectively involved in the study. Further, while Federal agencies may assist counterpart State agencies in such study elements as outdoor recreation, fish and wildlife, or water supply, the prospects of effective action will be substantially enhanced if these agencies assign professional personnel to arrive at their own judgments and recommendations on what should be done in their areas of responsibility.

In this study there is special urgency for effective involvement by regional planning agencies. All, or substantially all, of the study area is served by regional planning organizations (Rhode Island's Statewide Planning Program serves this purpose in part). These regional planning programs cover land use, transportation and other elements in addition to water and related land resources. It is essential that the water and related land use plan developed through the Commission recognize and complement the aspirations and objectives of State and regional planning agencies. The converse, of course, is also true. Many regional plans deal directly with water supply and waste disposal, and with use and development of shorelines and other lands intimately associated with water.

The Commission hopes, with assistance from State planning agencies, to establish and maintain close liaison with regional planning organizations.

While the study will span four years, recommendations for action by local, State and Federal governments and private interests will be made as soon as sound judgments can be made. In other words, prompt action may be recommended on flood control projects, acquisition of critical land areas, or other programs early in the planning process.

A preliminary plan of study and coordinated budget has been prepared. This document has been approved by the Water Resources Council, an agency of the Federal government which coordinates all major water resources planning programs in which the Federal government is involved. Funding of the SENE study will be processed by the Public Works Subcommittee on Appropriations of the Appropriations Committees of the House of Representatives and the Senate.

The preliminary document recommends an initial appropriation to all participating Federal agencies for Fiscal Year 1970, and for the duration of the study. The specific dollar amounts will be adjusted after a detailed plan of study is projected.

Prior to initiation of the SENE study, the New England Division, Corps of Engineers, will initiate a series of investigations of flood problems in the Narragansett Bay drainage area identified by the floods of March 1968. Urgently needed projects may be recommended for prompt action. Where flood control projects may affect other uses of rivers or related lands, coordination will be sought by the Corps through the Coordinating Committee for the SENE study. As the SENE study goes forward, the flood control investigations will be directed by the Corps as an important element of the overall study.

### *Will the Study Lead to Action?*

The study will be useful only if it leads to prompt and effective action. A critical factor will be whether the recommendations for action are understood and fully supported by the citizens of the area. The Commission recognizes that full participation by private institutions and individuals is essential if the study is to lead to a consensus for effective action.

Public hearings will be held early in the planning process. The Commission hopes to suggest specific action possibilities in these early hearings to give the private citizens of the area something specific to react to. Other hearings will be held throughout the planning process, including a final series when the action plan is being formulated. Regular and special meetings of the Coordinating Group will be held throughout the study area, and will be open to the public.

The Commission may establish an advisory committee of public officials and private citizens from throughout the region. It may be desirable to have such broad advisory committees from appropriate subregions within the study area—i.e., Narragansett Bay, Cape Cod, the Boston Metropolitan area, etc.

The Commission recognizes a responsibility to generate and distribute information in ways that will insure that all interested parties will consider and express themselves on the study. We hope that citizen action groups, trade and industrial organizations, chambers of commerce, labor unions, etc., will take the time to make informed judgments and recommendations. And we entertain the hope that interested organizations of all persuasions may find it feasible to join in a consortium for the purpose of generating and channeling responsible public interest in the study. Should the study recommendations merit the support of people of the Southeastern New England area, the Commission would hope that an organized area-wide effort to support implementation through Federal, State, local and private action would follow.

The study will lead to action if its recommendations are sound, and if the Southeastern New England community works to get action. The technical job of planning is relatively easy; the task of responding to and enlisting public interest and support is critical.

### *What Will the Study Cost? Who Will Pay?*

The cost of the study cannot be accurately computed until the detailed plan of study is completed. An evaluation must be made of previously completed and ongoing studies to determine the scope and focus of additional studies needed.

Costs of Federal agency participation will be borne by appropriations from the Congress for each participating agency. As a comparison, Federal costs for the comprehensive study of water and related land resources of the Connecticut River will be between three to four million dollars.

Costs of Commission participation—now estimated at approximately \$220,000 for the life of the study—will be borne out of regular State and Federal contributions. New England River Basins Commission operating expenses are shared equally by the Federal Government and the seven participating States. At the first Commission meeting on October 16–17, 1967, each of the six New England states and the State of New York reaffirmed their commitments of \$10,000 per state which, when matched with equal Federal funds provided an initial fund for Fiscal Year 1968 of \$140,000.

Like amounts of State and Federal funds have been made available for Fiscal Year 1969, thus providing a total of \$280,000 for operations in the first two fiscal years. Commission operating expenditures for Fiscal Year 1969 are budgeted at approximately \$240,000, and for Fiscal Year 1970 and 1971, approximately \$275,000 per year.

It has not been customary for States participating in Federally-directed comprehensive studies to prepare budgets allocating funds for State agency participation. Since the SENE study is a joint Federal-State study and provides a full opportunity for State agencies to influence study management and recommend specific actions, the Commission hopes that each State will develop a positive program for participation. It seems likely that, as a minimum, States would consider assigning one qualified professional to help coordinate State participation; and will consider appropriation of funds to individual State agencies, where necessary, to assure that the study contributes to State objectives.

A portion of the States' costs could be borne by the Federal government under programs providing financial assistance for planning, including grants for comprehensive State planning programs, and for water resources, outdoor recreation, and fish and wildlife planning.



*Organization—Southeastern New England Comprehensive Water and Related Land Resource Study*

COORDINATING GROUP

Chairman: Chairman, New England River Basins Commission.

States: State of Rhode Island and Commonwealth of Massachusetts.

Federal: Department of Army, Department of Agriculture, Department of Health, Education, and Welfare, Department of Housing and Urban Development, Department of Interior, and Federal Power Commission.

Executive Secretary: Staff member, NERBC.

STATE OF WASHINGTON SEACOAST MANAGEMENT ACT—THIRD DRAFT

SECTION. 1. The legislature finds that the seacoast of the State of Washington is a unique and valuable natural resource, affording to its citizens the opportunity to engage in many activities not available in other areas; that this seacoast is a delicate mechanism profoundly affected by slight changes in physical and ecological factors; and that the optimum utilization of this resource requires a careful consideration of these factors and a coordinated effort to develop the seacoast in such a way that all the various uses are provided for to the fullest extent possible, and in such a way that they will complement each other. It is therefore declared to be the policy of this state that the seacoast be treated as a unit to maximize its value to all citizens, whether individual, corporate, or municipal.

SECTION 2. To implement this policy, the Environmental Quality Department is directed to promote the orderly multiple-use development of Washington's seacoast. Such uses shall include, but shall not be limited to, spawning grounds and habitat for fish, shellfish, water fowl, and other wildlife; tourist facilities; aqua-culture; the various recreational uses; commercial development of ports and industry; and individual and multiple-unit residential development. In the event of conflicting uses, and insofar as possible, the uses to be preferred shall be those that promote and enhance the interests of the public health, safety, and welfare, shore preservation, pollution control, and preservation of natural beauty. In all cases, those uses unique to or dependent upon the seacoasts shall be preferred over those that can be located elsewhere.

SEC. 3. DEFINITIONS.—As used in this act, unless the context indicates otherwise:

(1) "Director" means the director of the Environmental Quality Department.

(2) "Department" means the Environmental Quality Department.

(3) "Seacoast" means marine waters and their beds, harbor areas, tidelands, and adjacent upland areas for a width of 1000 feet from the line of mean high tide, or for the lowland area subject to marine water flowage, or as needed to create a zone of sufficient size to be reasonably suited to the stated purpose, whichever is greatest.

(4) "Coastal counties" and "coastal cities" mean those counties and incorporated cities which contain, within their limits, any seacoast subject to this act.

(5) "Agency" means any officer or any administrative or organizational branch of state government, regardless of its particular official designation.

SEC. 4. The provisions of this act shall not apply to:

(1) Those seacoast areas outside of the region extending from the mouth of the Columbia River or Cape Disappointment, along the Pacific Ocean, around Cape Flattery, and along the Strait of Juan de Fuca to the entrance to Puget Sound or Pt. Wilson, and including all contours, bays, points, and other features of such region.

(2) Indian lands, when such provisions are in conflict with any treaty or statute of the United States.

SEC. 5. Guidelines and regulations adopted pursuant to this act may cover, to the extent deemed necessary by the adopting or promulgating body, any use or alteration of the seacoast. Such uses and alterations shall include removing sand, gravel, trees, vegetation, or other shore and bed material; building any structure; discharge of sewage, industrial waste, or other contaminant; grading, filling, dredging, or lagooning; and the operation of boats and ships.

SEC. 6. The department shall adopt basic guidelines for seacoast development. These guidelines shall be general policies applicable to all seacoast areas subject

to this act and shall contain: Findings as to the optimum statewide allocation of the seacoast resource among the various uses enumerated in Section 2, methods and procedures for combining those uses so that they complement one another; and standards for protecting the basic interests as enumerated in Section 2. These guidelines may be revised or amended at any time if the commission determines that such new guidelines would more effectively achieve the purposes of this act. In formulating these guidelines, the department shall consider existing plans, recommendations, and information for and about Washington's seacoast, whether made by state agencies, local units of government, federal agencies, private individuals and organizations, or other appropriate sources. If the department finds, either initially or at some future time, that such sources are inadequate for formulating or reformulating its guidelines, it shall cooperate with the appropriate agencies or units of government, or with the appropriate private individuals or organizations, in obtaining and developing new or additional plans, recommendations, or information.

Sec. 7. Except for an emergency as provided in RCW 34.04.030, no guidelines may be adopted, revised, or amended under the preceding section until after the department has held a public hearing, in Olympia, at which time interested public and private parties will have the opportunity to present statements and opinions on the proposed guidelines. Notice of any such hearing shall be published at least once in each of the two weeks preceding the hearing, in at least one newspaper of general circulation in Olympia, and in at least one newspaper of general circulation in each of the counties to be affected by such guidelines. After the department has issued its guidelines it shall give public notice by having them published in those newspapers used to give notice of the hearings, and by filing a copy to be recorded with the county auditor of each coastal county, and by filing a copy with the code reviser, and by maintaining a copy in its office for public inspection. Unless inconsistent with some provision of this act, the administrative procedures act, RCW 34.04, shall apply to all other matters relating to the adoption, administration, application, and validity of any guideline adopted under this act.

Sec. 8. The department's guidelines shall serve as temporary regulations on the use of the seacoast, until such time as more detailed zoning regulations adopted under this act have taken effect.

Sec. 9. Not later than fifteen months after the department has originally adopted guidelines pursuant to Section 6 of this act, or not later than four months after the department has adopted revised guidelines, each coastal county shall adopt zoning regulations for its seacoast. Such regulations shall apply the department's guidelines to local needs and conditions. Upon petition by the legislative authority of a coastal city that has an established planning commission, a coastal county shall delegate to that city the authority to adopt these zoning regulations for the seacoast located within such city: *Provided*, That the county then approves and adopts such regulations as part of its seacoast zoning regulations.

Sec. 10. After each coastal county has adopted its zoning regulations, or any amendment to them, it shall submit them to the department for review and approval. Approval shall be withheld only if the department, within sixty days of such submission, finds that the regulations do not incorporate the findings, methods, and standards contained in the guidelines, and if it further finds that any variance from the guidelines is not excused by special circumstances. If approval is not granted, it shall detail the defects it finds and shall recommend to the county those changes in the proposed regulations that will bring them into compliance with the guidelines. The county shall then have sixty days in which to adopt the department's recommendations, or other revisions designed to correct the defects, and resubmit the regulations to the commission. The department shall then finally approve the regulations within thirty days, using, in the following order of priority, either the county's alternative revisions, some other plan negotiated with the county, or its own recommendations. The regulations shall take effect when finally approved by the Commission.

Sec. 11. Coastal counties and cities may grant variances from the provisions of the seacoast zoning regulations adopted under this act: *Provided*, That all such variances are considered as amendments to their zoning regulations and are submitted to the department for review and approval as in Section 10.

Sec. 12. The zoning regulations adopted under this act shall be adopted and administered pursuant to all the provisions relating to planning commissions and zoning ordinances contained in RCW 35.63 that are not in conflict with the provisions of this act: *Provided*, That the types of permissible regulations enumerated in RCW 35.63.080 shall not prevent the adoption of other types of regulations.

that may be necessary to give effect to the commission's guidelines or the purposes of this act.

Sec. 13. If a coastal county does not have seacoast zoning regulations in force at any time after the periods set by this act for the adoption of such regulations, the department shall adopt such regulations for the county: *Provided*, That the county may thereafter supersede the department's regulations by adopting its own regulations pursuant to this act: *And provided further*, That the department may extend the time period within which the regulations are to be adopted if it finds that the county is in the process of adopting such regulations and is making all reasonable efforts to complete the process in the shortest possible time.

Sec. 14. After the department has finally approved any regulations adopted pursuant to this act, it shall give notice of the regulations as it did for the guidelines, and also by serving, either personally or by registered mail, notice of the regulations, and of the right to appeal, on each property owner affected thereby.

Sec. 15. Any party having a recorded interest in property affected by any guideline or regulation issued pursuant to this act may, within sixty days after being served with notice or otherwise learning of such guidelines or regulation, petition the superior court of Thurston County or of the county in which the property in question is located, to determine whether such guideline or regulation so restricts the use of his property as to be an unreasonable exercise of the state's police power. If the court finds that the guideline or regulation unreasonably restricts the use of the property it shall enter an order voiding the guideline or regulation, or part thereof, with respect to that piece of property in question. The court shall record all such orders with the auditor of the county where the property is located, but no such order shall apply to any other piece of property, and no other body or proceeding shall have jurisdiction or authority to determine whether the exercise of police power embodied in the guideline or regulation is reasonable.

Sec. 16. If a guideline or regulation is held to be unreasonable the department and/or the county shall have the option, within thirty days, of adopting an amended guideline or regulation, or of taking the fee, or any lesser interest in the property, by eminent domain.

Sec. 17. The superior court of Thurston County or of the county containing the seacoast property in question shall have jurisdiction to restrain any violation of the guidelines or regulations adopted under this act. The attorney general, at the request of the department, or the prosecuting attorney, at the request of the county's seacoast zoning body, shall bring any action necessary to enforce such guidelines or regulations.

Sec. 18. Any person found to have violated a guideline or regulation adopted under this act shall be civilly liable for any and all damages arising from such violation. Where appropriate, the measure of damages shall include the restoration of the lands or property in question to a condition consistent with the guidelines or regulations.

Sec. 19. In addition to incurring civil liability under section 18, any person found to have knowingly violated a guideline or regulation adopted under this act shall be guilty of a gross misdemeanor, and shall be punished by a fine of not less than one hundred nor more than twenty-five hundred dollars, or by imprisonment in the county jail for not more than ninety days, or by both such fine and imprisonment: *Provided*, That the fine for the third and all subsequent violations in any five year period shall be not less than one thousand nor more than ten thousand dollars.

Sec. 20. To better understand the impact of its proposals and policies, and to achieve necessary coordination with other public agencies and with private parties, and to develop methods of achieving the purposes of this act, the department shall appoint one or more councils to assist it in its work. Such councils may be advisory or coordinating, general purpose or specialized, or ad hoc or permanent, as needed. They shall be composed of representatives from the various public agencies and types of local government concerned, and from the private sector. The director shall select the private sector members of such councils, and shall select the government members after consultation with the agency or governmental group they will represent, and shall set the terms and number of the members in the way that will best accomplish the purpose for which the council is being created. The members shall serve without compensation, except that they shall be re-imbursed for their expenses, and private members shall receive twenty-five dollars per diem for each day spent in serving as a member of the advisory council.



SEC. 21. For the purposes of administering this act the department may enter into contracts with, or receive funds from, the State of Washington or any of its agencies or subdivisions, from the Federal Government, or from any other public or private agency, person, or organization.

SEC. 22. The commission may acquire property or any interest therein, by purchase or eminent domain, if it determines that such property is needed, and otherwise unavailable, to achieve the purposes of this act. Title to property acquired pursuant to this section and Section 16 shall be taken in the name of the State, and the property itself shall be managed and administered by the appropriate state agency.

SEC. 23. All appropriate state agencies, local governments, and other public bodies shall review administrative and management policies, regulations, contracts, and plans affecting lands or resources under their respective jurisdictions that may in any way involve the seacoast subject to this act and shall work individually, with each other, and with the department to achieve the purposes of this act. Particular attention shall be given to scheduled timber harvesting, road construction, water impoundments, diversions, dredgings and similar activities which may be contrary to the purposes of this act. Nothing in this section shall be construed to abrogate any existing rights, privileges, or contracts affecting state lands held by any private party without the consent of such party or without compensation being paid to such party.

SEC. 24. Neither the State nor any of the agencies shall sell any fee interest they have in any seacoast lands or property, whether or not subject to the other provisions of this act, except that the department may grant approval for the sale or exchange of such lands or property in order to block up and consolidate the state's seacoast holdings, or in order to carry out the purposes of this act.

SEC. 25. The department is authorized to work with the United States, the Dominion of Canada, the State of Oregon, the Province of British Columbia, and other interested governments, organizations, and individuals, as the official representatives of the State of Washington in the field of seacoast development and policies.

SEC. 26. All easements, rights-of-way, and similar interests in those public lands subject to this act, heretofore generally granted, by statute, to those who would use the land in a specified way, and not yet exercised by them, are hereby limited to the extent that they shall not be exercised in any way not consistent with the guidelines or regulations adopted under this act.

SEC. 27. This act is exempted from the rule of strict construction, and it shall be liberally construed to give full effect to the objectives and purposes for which it was enacted.

SEC. 28. If any provision of this act, or its application to any person or circumstance, is held invalid, the remainder of the act, or the application of the provision to other persons or circumstances, shall not be affected.

SEC. 29. If the department of environmental quality is not created by the legislature, the powers and functions given to the department by this act shall temporarily vest in such agency as is designated by the Governor.

---

#### STATE OF TEXAS COASTAL RESOURCES PLAN, OCTOBER 27, 1969

The *objective* of the comprehensive Coastal Resources Plan is to provide for the management and development of the human and natural resources of the urbanizing Texas Gulf Coast Region.

Attached to this statement is a copy of each of the following:

- (1) Program Guideline: Policy framework for the Texas coastal planning program.
- (2) S.C.R. No. 38: Authorizes the Interagency Natural Resources Council of Texas to undertake the coastal effort.
- (3) S.B. No. 20: Declares a four-year moratorium on the sale or lease of State-owned beaches, islands, and submerged tidelands.
- (4) S.B. No. 16: Provides State grants for maintenance of public beaches.
- (5) S.B. No. 19: Creates beach park boards in coastal counties.
- (6) S.B. No. 17: Stipulates criminal penalties for denial of access to public beaches.
- (7) S.B. No. 18: Requires permits for all coastal mineral and earth excavations.

The 61st Texas Legislature appropriated \$200,000 to the Governor's Office

for the initial program coordination of the State's coastal effort which will mesh together the estuarine activities of eight State agencies into one united endeavor through the Interagency Natural Resources Council.

# PROGRAM GUIDELINE FOR A COMPREHENSIVE COASTAL RESOURCES PLAN FOR THE TEXAS GULF COAST REGION

(Prepared by the Interagency Natural Resources Council, Hon. Preston Smith, Chairman, Governor of Texas)

## Introduction

*The objective of the comprehensive Coastal Resources Plan is to provide for the management and development of the human and natural resources of the urbanizing Texas Gulf Coast Region.*

Senate Concurrent Resolution No. 38 directs that the coastal areas of the State are to be delineated and developed in a manner that maintains a determined balance between the need to protect and to conserve the natural resources and the natural beauty of these areas and the need to develop these riches to further the growth and prosperity of Texas. The Resolution authorizes the Interagency Natural Resources Council to initiate the Coastal Resources Plan for the Texas Gulf Coast Region. This cooperative interagency effort in planning the development of this entire region is without precedent in Texas State government and will be conducted as a continuous program.

The Plan focuses on a broad ribbon of land and sea from Louisiana to the border of Mexico consisting of bays, estuaries, submerged lands, beaches, and the adjacent and contiguous lands. This area is approximately 60 miles wide, and includes the State-owned tidelands extending out to the 10½ mile seaward limit, the land area to an average of about 50 miles inland which includes the first tier of counties, and other areas important to certain large bays and estuaries, such as Harris County. The extent of the planning area is subject to revision as developments may indicate.

While a major part of the dryland coastal areas are under private ownership, a great portion of the submerged coastal lands, commonly known as the tidelands, belong to the people of Texas, and these lands are held in trust for them by the State. This fact places a unique responsibility on the State of Texas to insure that the four and one-half million acres comprising the coastal public domain of Texas are properly managed and developed, while fully respecting, at the time, the rights of private ownership of some of the lands and resources in the coastal area.

The State has a general and overriding responsibility for providing the planning and guidance necessary for the desirable use of the great wealth of natural resources of this region in a manner compatible with the common good and consistent with the tenets of our form of government. The formulation of the legislation needed for this purpose will be a major endeavor of the coastal planning program.

## Interagency Natural Resources Council

The 60th Legislature, to foster the coordination of State long-range planning and functional activities at all levels of operation, designated the Governor as the Chief Planning Officer of the State and established a Division of Planning Coordination within the Governor's Office. The Legislature also provided for the creation of interagency planning councils chaired by the Governor and composed of the executive directors of the participating member agencies.

The Governor has thus created the Interagency Natural Resources Council to give attention to the interagency coordination necessary for the unified development of Texas water, parks and environmental quality programs. Underlying these actions was the conviction that State government must continue its primary responsibility for the conservation and management of its natural resources.

The present members of the Council are:

Office of the Governor  
General Land Office  
Texas Air Control Board  
Texas Industrial Commission  
Texas Railroad Commission  
Texas Highway Department  
Texas Parks and Wildlife Department

Texas Soil and Water Conservation Board  
Texas Water Quality Board  
Texas Water Development Board  
Texas Water Rights Commission  
Ex officio members

The Council is the means that has been established to help to coordinate the natural resources development of Texas. It has determined that the Texas coastal bay systems are rich in natural wealth and are and will be rapidly developed for industrial, residential, navigational, fishing, and recreational purposes. With this perspective in mind, the Interagency Natural Resources Council has recognized the desirability of meshing together the long-range planning efforts and the field operations of the various State agencies in regards to their activities along the Gulf Coast.

For this purpose, the Council undertook the responsibility to design a framework for the formulation of standards, policies, and programs for the physical development of the coastal region of the State, including the use and management of the contiguous lands, and endorsed the implementation of the comprehensive Coastal Resources Plan on a continuous yearly basis.

Due to the magnitude and the diversity of the Plan, the Interagency Natural Resources Council will provide continuous policy direction. Also, a project staff will be employed within the Governor's Office to coordinate this interagency coastal effort. The staff's activities will be directed toward the voluntary and well-managed cooperation and participation of the eight State agencies that have statutory responsibilities for various fields of estuarine activity along the Texas Gulf Coast.

### *Policy Considerations*

During the course of the Coastal Resources Plan, the following fundamental questions must be answered. These are:

1. What are the economic potentials of the Texas coastal region?
2. How will the coastal region be developed by the continuation of present trends?
3. How do the people of the State want the coastal region to be conserved, used, and developed?
4. What changes in present practices are necessary or desirable?
5. How can constructive management be accomplished?
6. Who can accomplish the objectives of the Plan?
7. When should the Coastal Resources Plan be implemented?
8. What are the costs and benefits to be derived from the proper management of our coastal resources?
9. How can the development of both public and private coastal lands be made compatible with each other for the people's general welfare?

The Plan requires the exploration and definition of all factors pertinent and peculiar to the development and management of the resources of the beaches, bays, and estuaries of the entire coastal region. It is multi-disciplinary in its approach through the utilization of all existing and funded programs and the expertise and capacity of State, local, and federal governmental units, regional planning councils, and private entities, organizations, and institutions, with these programs ranging from data collection and evaluation to research and management.

The comprehensive Coastal Resources Plan will guide the development of these resources for the satisfaction of the collective needs of man in his relationship to the urbanizing coastal environment. Thus, the Plan is founded on the principles that the fundamental coordinating responsibility for the management and the orderly development of these resources rests with the State, and the development must satisfy the highest values and needs of the citizens of Texas, of private interests, and of the United States.

It is apparent that what this regional planning program will encompass cannot be forecast at this time. It is also apparent that demands on the coastal region will continue to mount as present and proposed activities progress. These urban activities range from direct use for water supply by industries, municipalities, and water districts, to indirect use by the inflow of run-off waters through watershed developments, by pollution from increased amounts of waste discharged to hazards of off-shore drilling, and by the development of beaches for needed recreational facilities.

Obviously, there are tasks that cannot wait. One such task is to find temporary solutions to some urgent problems created by the expanding urban coastal population. Another task is the identification and control of factors relating to the aquatic environment. The programs now underway for the solution of these pressing problems must continue by the vigorous utilization of present knowl-



edge and existing capabilities. On the other hand, there are tasks that must wait for information resulting from research and for the development of scientific and political methods needed.

#### *Planning Effort*

To ascertain the economic, cultural, and recreational contributions of the coastal region of Texas under various levels and types of management, the Plan is mandatory. It is required for the formulation of legislation determining the priority of State governmental programs and projects to be conducted to attain the desirable goals of coastal development and to correct present or overlapping coastal problems.

The preliminary planning effort began on March 4, 1969, by the means of a \$10,500 interagency contract between the Interagency Natural Resources Council and the Sea Grant Program of Texas A & M University. The scope of this effort is to compile an annotated bibliography of prior studies, studies currently funded, and proposed research reports and action programs by federal, state, and local governments and by institutions, entities, and industry within the coastal region. This planning area includes the Texas bays, estuaries, beaches, associated and adjacent counties, and the submerged tidelands out to the 10½ mile State boundary as mentioned.

Again, the ultimate success of the Coastal Resources Plan clearly depends upon the effective cooperation of the many federal, State, and local agencies and regional planning councils involved. This effective interagency and intergovernmental cooperation depends on a positive plan of action and the full utilization of the many disciplines available.

The experience and methodology developed from the Galveston Bay Study will be one of the important sources of information utilized by the Plan. In addition, a flexible staff organization, as indicated, will bring the managerial and technical competence and the political and financial realities together into a purposeful, integrated, and truly cooperative planning program.

#### *Task Activities*

Starting on September 1, 1969, and during the following 12 months, the Plan will begin to outline the planning tasks to be accomplished and to determine the methodology to be used in attaining its policy goals and guidelines. Specifically, the planning effort has the following general objectives for this period. These are the—

- (1) Definition of the boundaries of the study area, and the scope, magnitude, duration, and cost of the program.

- (2) Identification and definition of specific planning parameters and guidelines.

- (3) Preparation of detailed task descriptions suitable to provide the basis of contracts and interagency agreements with State agencies and universities, local and federal governmental units, private enterprises, citizens organizations, regional planning councils, and other cooperators.

- (4) Development of a critical path schedule with appropriate target dates for the significant work phases, definition of lines of authority, and detailed schedule of these cooperative task performances.

- (5) Analysis of existing data, research activities, and programs now in progress, incorporating the activities into the comprehensive planning effort with full regard to the statutory responsibilities, traditional interests, and potential capabilities of the agencies and organizations involved.

- (6) Definition of areas of data deficiency and research needs.

- (7) Development of a complete funding and staffing plan, including sources and timing of funding needs and recruitment and training of planning personnel.

The progress made in the development of the Coastal Resources Plan will be reported by the Interagency Natural Resources Council to the Texas Legislature through the Governor. Should need for revision, change in emphasis, or supplemental activity become evident during the preparation of the comprehensive Plan in these existing programs, the Council will make recommendations for such action.

The following is an enumeration of task subjects which will be considered during the planning effort. These are:

- |                         |                         |
|-------------------------|-------------------------|
| 1. Sociology            | 8. Chemistry            |
| 2. Economic development | 9. Hydrology            |
| 3. Recreation           | 10. Biology and ecology |
| 4. Land use             | 11. Coastal engineering |
| 5. Transportation       | 12. Geology             |
| 6. Water quality        | 13. Legal research      |
| 7. Physical dispersion  | 14. Systems management  |

These tasks represent areas of interest which will be developed into more detailed task descriptions. The listing is by no means all-inclusive, and it is expected that additional tasks will be identified during the coastal program.

#### *Program Budget*

The following analysis provides a breakdown of the initial State General Revenue funding for the Coastal Resources Plan for the period September 1, 1969, to August 31, 1970:

1. Personnel services-----	\$50,000
(a) Program coordinator.	
(b) Planning analyst.	
(c) Research assistant.	
(d) Secretary/clerical help.	
2. Technical consultants-----	10,000
3. Contracted services-----	10,000
4. Travel -----	10,000
5. Reproduction and publications-----	10,000
6. Other expenses-----	10,000
7. Total State Funded Budget-----	100,000

Federal grant funds are not enumerated but are requested and would measurably increase the size of the program effort. In addition, each major State agency member of the Interagency Natural Resources Council will contribute in-kind services to the continuous planning program.

#### SENATE CONCURRENT RESOLUTION 38

Acts of the 61st Legislature, Regular Session, 1969

Whereas, the state-owned submerged lands, islands, estuaries, and estuarine areas in the Texas Gulf Coast Area, including the submerged lands of the state seaward of the mean of lower low water marks in the Gulf of Mexico, and the natural resources and the environmental natural beauty with which they are so richly endowed, constitute an important and valuable property right belonging to the Public Free School Fund and to all of the people of Texas, and they are of immediate and potential value to the present and future generations of Texans; and

Whereas, it is the declared policy of the state that such submerged lands, islands, estuaries, and estuarine areas shall be so managed and used as to insure the conservation, protection, and restoration of such submerged lands, islands, estuaries, and estuarine areas with resources and natural beauty and, consistent with such protection, conservation and restoration, their development and utilization in a manner that adequately and reasonably maintains a balance between the need for such protection in the interest of conserving the natural resources and natural beauty of the state and the need to develop these submerged lands, islands, estuaries, and estuarine areas to further the growth and development of the state; and

Whereas, the people of the State of Texas have a primary interest in the correction and prevention of irreparable damage to or unreasonable impairment of the uses of the coastal waters of the state and inland waters of the state in such estuaries and estuarine areas caused by drainage, waste water disposal, industrial waste disposal, and all other activities that may contribute to the contamination and pollution of such waters; and

Whereas the people of the State of Texas also have primary interests in the value of such lands, islands, estuaries, and estuarine areas as public property for production and marketing of oil and gas and under minerals and mineral resources, for the production of living resources, for shell and other fisheries and

fishing, hunting, and other recreation, for wildlife conservation, and for health and other uses in which the public at large may participate and enjoy; and

Whereas it is also the declared policy of this state that the public, individually and collectively, shall have the free and unrestricted right of ingress and egress to and from the state-owned beaches bordering on the seaward shore of the Gulf of Mexico and hence the people of the State of Texas have a further primary interest in conserving the natural beauty of the state's beaches and protecting and conserving them for the use of the public; and

Whereas a comprehensive study is necessary to prepare the way for constructive legislation for the present and future protection of the interests of the people of the State of Texas in such submerged lands, beaches, islands, estuaries, and estuarine areas; and

Whereas, the United States Government is now conducting similar studies under P.L. 660 of the 84th Congress as amended and under P.L. 90-454 of the 90th Congress and is entitled to receive the full cooperation of the agencies of this state with respect to the lands, beaches, waters, estuaries, and estuarine areas of this state: Now, therefore, be it

*Resolved by the Senate of the State of Texas (the House of Representatives concurring), That the following be accomplished:*

SECTION 1. The Interagency Natural Resources Council, an interagency planning entity created under the authority of House Bill 276, Acts 1967, 69th Legislature, Regular Session, Chapter 417, in consultation with the School Land Board and the Submerged Lands Advisory Committee and with all other appropriate local, state, and federal agencies, is authorized and directed to make a comprehensive study of the state's submerged lands, beaches, islands, estuaries, and estuarine areas, including but without limitations coastal marshlands, bays, sounds, seaward areas, and lagoons. The term "estuary" means all or part of the mouth of an intrastate or interstate river or stream or other body of water, including, but not limited to, a sound, bay, harbor, lagoon, inshore body of water, and channel, having unimpaired natural connection with the open sea and within which the sea water is measurably diluted with fresh water derived from land drainage. The term "estuarine areas" means an environmental system consisting of an estuary and those transitional areas which are constantly influenced or affected by water from an estuary such as, but not limited to coastal salt and freshwater marshes, algal flats, coastal and intertidal areas, sounds, bays, harbors, lagoons, inshore bodies of water, and channels. For the purpose of the study or studies of these lands, beaches, islands, estuaries, and estuarine areas, the Council shall consider, among other matters (a) their wildlife, health, and recreational potential, their ecology, their value as natural marine habitats and nursery feeding grounds for the marine, anadromous, and shell fisheries, their value as established marine soils for producing plan growth of a type useful as nursery or feeding grounds for marine life and their natural beauty and esthetic value, (b) their importance to navigation, their value for flood, hurricane, and erosion control, their mineral value, and (c) the value of such areas for more intensive development for economic use to further the growth and development of the state. The study or studies shall also include (a) studies of the various problems of coastal engineering such as the protection of the beaches and bay bluffs from harmful erosion, the design and use of groins, seawalls, and jetties, and the effects of bay fills, fish passes, and other coastal works upon the physical features of the shores, channels and bay bottoms and upon marine life and wildlife inhabiting such areas and (b) studies of the effects of waste and drainage water discharges into the waters of such estuaries and of the Gulf of Mexico in relation to the reasonable protection and conservation of the marine environment and the natural resources, and natural beauty of these submerged lands, beaches, islands, estuaries, estuarine areas, and their overlying waters. In conducting the study or studies, the Interagency Natural Resources Council shall consider, among other matters, and without limitation as to the generality thereof, the physical and economic effects of existing and proposed water development projects of federal, state, and local agencies, and of authorized and prospective drainage projects of whatever nature upon the coastal waters and the waters of the state's estuaries and estuarine areas, the feasibility of reclaiming drainage waters from such projects, the future population growth and economic development in the area and in areas tributary thereto, the effects of existing and proposed projects for the filling and reclamation of waterfront lands upon the waste assimilative capacity of the coastal waters and the waters of the state's estuaries and estuarine areas, the possibilities of reclamation and reuse of waste waters and drainage water from such



projects, and the feasibility of flow augmentation through managed releases from upstream reservoirs as an aid to quality maintenance.

SEC. 2. The Interagency Natural Resources Council may receive grants and matching funds from and may contract with such state, federal, or local public agencies or private agencies, entities, or educational institutions as it deems necessary for the rendition and affording of such management and technical services, facilities, studies, and reports, and personal services and operating expenses as will best assist it to carry out the purposes of this concurrent Resolution.

SEC. 3. The Interagency Natural Resources Council of Texas is directed to call on the advice, counsel, and guidance, and participation of appropriate local, state, and federal departments, boards, agencies, and educational institutions. The council shall, to the fullest practicable extent, cooperate and coordinate its work with all departments, boards, and agencies undertaking planning and technical investigations pertinent to this study. The Interagency Natural Resources Council is directed to coordinate its study and, in order to avoid duplication of work, shall make maximum use of data and information available from state agencies and boards and federal agencies, including but not limited to the United States Public Health Service, the United States Corps of Engineers, the United States Department of Health, Education, and Welfare, the Federal Water Pollution Control Administration, the United States Soil Conservation Service, the United States Fish and Wildlife Service, the United States Bureau of Reclamation, the United States Geological Survey, the United States Department of the Interior, the School Land Board of Texas, and the Bureau of Economic Geology of the University of Texas.

SEC. 4. The Interagency Natural Resources Council is authorized to hold one or more public hearings which it deems necessary or desirable for the full development of all facts pertinent to its studies. City, county and state officials, officers and employees and those of any other political subdivision of the state and of the state government are directed to furnish the Council, upon its request and within the limits of their respective facilities, such data, reports, and any other information it may require in connection with its studies, without any cost, fee, or charge whatsoever.

SEC. 5. On or before the first day of December, 1970, preceding the 1971 Regular Session of the Legislature, the Interagency Natural Resources Council shall submit to the Governor of Texas and to the Legislature a progress report indicating the status of its studies to date together with any recommendations for emergency legislation at that time to carry out the purposes of its studies as herein defined.

SEC. 6. The Interagency Natural Resources Council shall submit its final report to the Governor of Texas and to the Legislature on or before the first day of December, 1972, preceding the 1973 Regular Session of the Legislature, together with its findings and recommendations for appropriate legislation to carry out the purposes of its studies as herein defined.

## PUBLIC BEACHES—MAINTENANCE—STATE POLICY

### CHAPTER 17<sup>2</sup>

#### S.B. No. 16

AN ACT Declaring the public policy of the State of Texas concerning the maintenance and cleaning of public beaches; authorizing certain cities and counties to apply for state funds; providing certain requisites for an application for state funds by a city or county; allocating duties and responsibilities relating to the maintenance and cleaning of public beaches; providing for payment of state funds to certain cities and counties through the Parks and Wildlife Department; providing certain restrictions and limitations; authorizing contracts between certain cities and counties and between certain counties relating to cleaning of beaches; defining certain terms; providing certain exemptions; providing for severability; and declaring an emergency

*Be it enacted by the Legislature of the State of Texas:*

SECTION 1. (a) It is the purpose of this Act to allocate responsibility for cleaning the beaches of this state, and to preserve and protect local initiative in the maintenance and administration of beaches.

(b) The public policy of this state that the public, individually and collectively, shall have the free and unrestricted right of ingress and egress to and from the state-owned beaches bordering on the seaward shore of the Gulf of Mexico in the event the public has acquired a right of use or easement to or over such

<sup>2</sup> Vernon's Ann. Civ. St. art. 5415d-1, §§ 1-12.

area by prescription, dedication, or continuous use, creates a responsibility for the state, in its position as trustee for the public, to assist local governments in the cleaning of beach areas which are subject to the access rights of the public as defined by Chapter 19, Acts of the 56th Legislature, 2nd Called Session, 1959, as amended (Article 5415d, Vernon's Texas Civil Statutes).

(c) The provisions of this Act shall not be construed to interfere with local initiative and responsibility in the cleaning, maintenance, and supervision of public beaches. The administration of public beaches, the selection of personnel, and, insofar as is consistent with the purposes of this Act, the determination of the best uses of the funds provided by this Act, shall be reserved to the several political subdivisions receiving funds under this Act.

SEC. 2. This Act shall apply to home-rule cities having a population in excess of 60,000 which are situated or border upon the Gulf of Mexico, and to all counties which are situated or border upon the Gulf of Mexico, provided that such city or county making application for funds under this Act has within its boundaries public beaches as defined in this Act.

SEC. 3. Any such county or city seeking state funds under this Act to clean public beaches must first submit an application to the Parks and Wildlife Department. To be approved, such application must:

(a) Provide for the administration or supervision of the public beaches of such county or city by a Beach Park Board of Trustees, County Parks Board, Commissioners Court, or other such administrative body that the Legislature may from time to time authorize, and provide that such Board or agency will have adequate authority to administer an effective program of keeping the public beaches within its jurisdiction clean.

(b) Provide for the receipt by the county or city treasurer, or other officer exercising similar functions if there be no county or city treasurer, of all funds paid to such county or city pursuant to this Act, and provide for the proper safeguarding of such funds by such officer, provide that such funds shall be expended solely for the purposes for which paid, and provide for the repayment by the county or city of any such funds lost or diverted from the purposes for which paid.

(c) Provide that the governing body of such county or city will make such reports as to amounts and categories of expenditures as the Parks and Wildlife Department may from time to time require.

(d) Provide that entrance to all public beaches under the jurisdiction of the governing body of such county or city shall be free of charge. This subsection shall not be construed to prohibit the assessment of a reasonable fee for off-beach parking, nor shall this subsection be construed to prohibit the assessment of a reasonable fee for the use of facilities provided for the use and convenience of the public.

(e) Provide for the establishment, maintenance, and administration of at least one beach park by such county or city, which shall meet such minimum requirements of size and facilities available to the public as shall be determined by the Parks and Wildlife Department.

SEC. 4. The department shall not approve any application which does not fulfill the conditions specified in Section 3 of this Act.

SEC. 5. (a) It shall be the duty and responsibility of the governing body of any incorporated city, town, or village situated or bordering upon the Gulf of Mexico to clean and maintain the condition of all public beaches within its corporate boundaries; provided that such duty shall not extend to any public beach within its corporate boundaries which is owned by the county in which it is located.

(b) It shall be the duty and responsibility of the commissioners court of any county situated or bordering upon the Gulf of Mexico to clean and maintain the condition of all public beaches within its boundaries and not within the boundaries of any incorporated city situated or bordering upon the Gulf of Mexico. It shall further be the duty and responsibility of such commissioner court to clean any public beach owned by the county but situated within the corporate limits of any incorporated city, town, or village.

(c) It shall be the duty and responsibility of the State of Texas to clean and maintain the condition of all public beaches located within state parks so designated by the Parks and Wildlife Department.

SEC. 6. Pursuant to the duties established by this Act, the commissioners court of any county situated or bordering upon the Gulf of Mexico is hereby authorized

to expend from any available fund such sums as it deems necessary to carry out its responsibilities under this Act.

SEC. 7. (a) From the appropriation available therefor, the Parks and Wildlife Department shall from time to time pay to each county or city which has its application approved under Section 3 of this Act, a amount hereinafter referred to as the "state share," provided that no payments shall be made to any such county or city until the department finds that (1) there will be available in the budget of such county or city not less than \$20,000 for the purpose of cleaning and maintaining public beaches within its jurisdiction for the state fiscal year for which reimbursement is sought, and (2) there will be available in the budget of such city or county for the purpose of cleaning and maintaining public beaches within its jurisdiction for the state fiscal year for which reimbursement is sought not less than the total amount expended by such county or city for the purpose of cleaning the beaches in the state fiscal year ending August 31, 1969.

(b) The Parks and Wildlife Department shall advise eligible cities and counties on the Gulf of Mexico of a period not less than sixty days after the effective date of this Act within which such eligible cities and counties may apply for a "state share" of beach cleaning funds and counties and cities seeking reimbursement under the provisions of this Act shall submit proposed expenditures for the purpose of cleaning and maintaining public beaches to the Parks and Wildlife Department. The department shall distribute in a fair and impartial manner the "state share" to counties and cities in accordance with procedures and accounting methods to be adopted by the Department.

(c) No county or city shall receive as its "state share" a sum greater than one-half the amount such county or city expends for the purpose of cleaning and maintaining public beaches within its jurisdiction during the state fiscal year for which reimbursement is sought, nor shall any such county or city receive as its "state share" a sum greater than \$50,000 for any state fiscal year.

(d) The Parks and Wildlife Department is authorized to use not more than 10 percent of the appropriated funds for any state fiscal year for administrative purposes.

SEC. 8. The governing body of any incorporated city situated or bordering upon the Gulf of Mexico which is not entitled to receive funds under this Act, may contract with the commissioners court of the county in which such city is located, for the purpose of allowing such county to clean the beaches within the corporate limits of such city. Such city may apply to the Parks and Wildlife Department for rebates of 40 percent of the contract price, provided that such city need not meet the terms and conditions imposed in Section 3 of this Act, except as otherwise provided. The department shall make such rebates at the close of each state fiscal year, upon a showing by such city that entrance to all public beaches under the jurisdiction of such city are free of charge.

This Section shall not be construed to prohibit the assessment of a reasonable fee for off-beach parking, nor shall this Section be construed to prohibit the assessment of a reasonable fee for the use of facilities provided for the use and convenience of the public.

SEC. 9. The commissioners court of any county which is not entitled to receive funds under this Act, may contract with the commissioners court of any adjacent county which is entitled to receive funds under this Act, for the purpose of allowing such adjacent county to clean the public beaches of the county which is not entitled to receive funds under this Act. Such contracting counties not entitled to receive funds under this Act may apply to the Parks and Wildlife Department for rebates of 40 percent of the contract price, provided that such contracting counties need not meet the terms and conditions imposed in Section 3 of this Act, except as otherwise provided. The department shall make such rebates at the close of each state fiscal year, upon a showing by such county that entrance to all public beaches under the jurisdiction of such county is free of charge. This section shall not be construed to prohibit the assessment of a reasonable fee for off-beach parking, nor shall this section be construed to prohibit the assessment of a reasonable fee for the use of facilities provided for the use and convenience of the public.

SEC. 10. If the department finds after reasonable notice and opportunity for a hearing to any county or city receiving funds under the provisions of this Act, that such county or city no longer complies with the requirements of this Act, it shall notify such county or city that further payments will not be made to such county or city until the department is satisfied that there is no longer any such failure to comply.



SEC. 11. For the purposes of this Act:

(a) "Department" shall mean the Parks and Wildlife Department.

(b) "Public beach" shall mean that beach area, whether publicly or privately owned to which the public has acquired the right of access, either by prescription, dedication, or by virtue of the right of continuous use, including but not limited to that area extending from the line of mean low tide on the Gulf of Mexico to the line of vegetation bordering on the Gulf of Mexico, or to a line 200 feet inland from the line of mean low tide, whichever shall be nearer the line of mean low tide, in the event the public has acquired a right of use or easement to or over such area by prescription, dedication, or has retained a right by virtue of continuous use.

(c) "Clean and maintain" shall refer to the collection and removal of litter and debris, and to the elimination of sanitary and safety conditions which would pose a threat to personal health or safety if not removed or otherwise corrected. The phrase "clean and maintain" may also be construed as permitting but not requiring the removal of driftwood or seaweed in instances that such material constitutes a public nuisance. The cleaning and maintaining of public beaches shall never be construed to refer to protection against erosion, the replacing of sand, or the rebuilding of structures.

SEC. 12. Nothing in this Act shall apply to any beach area not bordering on the Gulf of Mexico. This Act shall not apply to any island or peninsula that is not accessible by a public road or common carrier ferry facility, so long as such condition shall exist.

SEC. 13.<sup>3</sup> In the event any one or more of the sections or provisions of this Act, or the application of such sections or provisions to any situation, circumstances, or person, shall for any reason be held to be unconstitutional, such unconstitutionality shall not affect any other sections or provisions of this Act, or the application of such sections or provisions to any situation, circumstances, or persons, and it is intended that this Act shall be construed as if such sections or provisions had not been included herein for any constitutional application.

SEC. 14. The importance of this legislation and the crowded condition of the calendars in both Houses create an emergency and an imperative public necessity that the Constitutional Rule requiring bills to be read on three several days in each House be suspended, and this Rule is hereby suspended; and that this Act take effect and be in force from and after its passage, and it is so enacted.

Passed the Senate on September 6, 1969: Yeas 29, Nays 0; September 9, 1969, Senate concurred in House amendments; Yeas 26, Nays 0; passed the House on September 8, 1969, with amendments: Yeas, 140, Nays 0.

Approved Sept. 19, 1969.

Effective Sept. 19, 1969.

PUBLIC BEACHES—DENIAL OF ACCESS BY POSTING, ETC.—PENALTY

CHAPTER 18<sup>3a</sup>

S. B. No. 17

AN ACT Providing for the imposition of criminal penalties for the display of any communication at any public beach which states that the public does not have the right of access to such public beach; providing certain exemptions; providing for venue; defining "public beach"; and declaring an emergency

*Be it enacted by the Legislature of the State of Texas:*

SECTION 1. (a) Any person or association of persons, corporate or otherwise, who shall display or cause to be displayed, on any public beach any sign, marker, warning, or who shall make or cause to be made any other communication, written or oral, which states that such public beach is private property or in any other manner states that the public does not have the right of access to such public beach, in violation of the lawful access rights of the public guaranteed by Article 5415d, Revised Civil Statutes of Texas, shall be fined not less than \$10 nor more than \$200.

(b) Each day that such communication is made shall constitute a separate offense.

<sup>3</sup> Vernon's Ann. Civ. St. art. 5415—1 note.

<sup>3a</sup> Vernon's Ann. Civ. St. art. 5415d—2, §§ 1-3.

(c) This Act shall not apply to any island or peninsula that is not accessible by public road or common carrier ferry facility, so long as such condition shall exist.

SEC. 2. Any person or association of persons, corporate or otherwise, violating the provisions of this Act, shall be prosecuted in the county in which such public beach is located.

SEC. 3. For the purposes of this Act, "public beach" shall mean that area extending from the line of mean low tide of the Gulf of Mexico to the line of vegetation bordering on the Gulf of Mexico, or to a line 200 feet inland from the line of mean low tide, whichever shall be nearer the line of mean low tide, in the event the public has acquired a right of use or easement to or over such area by prescription, dedication, or has retained a right by virtue of continuous right in the public.

SEC. 4. The importance of this legislation and the crowded condition of the calendars in both Houses create an emergency and an imperative public necessity that the Constitutional Rule requiring bills to be read on three several days in each House be suspended, and this Rule is hereby suspended; and that this Act take effect and be in force from and after its passage, and it is so enacted.

Passed the Senate on September 6, 1969; Yeas 29, Nays 0; passed the House on September 8, 1969; Yeas 116, Nays 18.

Approved Sept. 19, 1969.

Effective Sept. 19, 1969.

#### GULF COAST AND PUBLIC BEACH AREAS—SAND REMOVAL—PERMITS, ETC.

##### CHAPTER 19<sup>4</sup>

##### S. B. No. 18

AN ACT Relating to permits for the excavation of sand, marl, gravel, or shell from islands or peninsulas bordering on the Gulf of Mexico, or from land within 1500 feet of a public beach; providing certain exemptions; providing for public notice; defining "public beach;" providing for enforcement of injunctive remedies by the Attorney General and other officials; providing a penalty for violations; and declaring an emergency

*Be it enacted by the Legislature of the State of Texas:*

SECTION. 1. The Legislature finds that the unregulated excavation, taking, removing, or carrying away of sand, marl, gravel and shell from islands and peninsulas bordering on the Gulf of Mexico and from the public beaches of this state constitute a substantial interference with public enjoyment of Texas beaches, a hazard to life and property.

SEC. 2. Any person or association of persons, corporate or otherwise, desiring to excavate, take, remove, or carry away sand, marl, gravel, or shell from any land located on any exposed island or peninsula bordering on the Gulf of Mexico, or from land located within 1500 feet of any public beach of this state, where such land is situated outside the boundaries of any incorporated city, town or village, shall first make written application therefor to the commissioners court of the county in which such excavation, taking, removing, or carrying away shall take place.

SEC. 3. Such application shall set forth the name of the applicant; the location and dimensions of the proposed excavation; the property interest or contractual right which enables applicant to excavate, take, remove, or carry away sand, marl, gravel, or shell; and shall include certification by the county treasurer, or if there be no county treasurer, other official exercising similar authority, that applicant has deposited a filing fee of \$50.

SEC. 4. Upon a finding that the proposed excavation, taking, removing or carrying away would not create hazardous conditons or imperil lives or property by exposing the island or peninsula or public beach to the ravages of storm waters, the commissioners court may issue a permit to such applicant and it shall be valid for six months from the date of issuance thereof. The decision of the commissioners court shall be made with the advice and counsel of the county engineer, in those counties where such official is employed by the commissioners court.

SEC. 5. If the commissioners court shall refuse the permit, applicant may recover his filing fee from the county treasurer, or if there be no county treasurer, other official exercising similar authority.

<sup>4</sup> Vernon's Ann. Civ. St. art. 5415g, §§ 1-14.

SEC. 6. No permit shall be issued by the commissioners court pursuant to the provisions of this Act to excavate, take, remove, or carry away any sand, marl, gravel, or shell from any land owned by the State of Texas, nor from any public beach in the State of Texas; nor shall any permit be issued by the commissioners court to excavate, take, remove, or carry away any sand, marl, gravel, or shell from any privately-owned land subject to the provisions of this Act which is not located on a public beach, unless applicant is the owner of the land where the proposed excavation, taking, removing, or carrying shall take place, or unless applicant is acting with the knowledge and consent of such owner.

SEC. 7. The provisions of this Act shall not apply :

(1) to any taking, removing, carrying away, or excavation of sand, marl, gravel, or shell made for the purpose of constructing improvements upon real property, where such improvements are constructed upon the property where said taking, removing, carrying away, or excavation occurs.

(2) to any landowner desiring to shift sand, marl, gravel, or shell from one location to another on land wholly owned by such landowner.

(3) to any agency of the federal or state government, nor to any agent nor officer thereof acting in his official capacity; nor shall the provisions of this Act apply to any agency of any county, city, or other political subdivision, nor to any agent nor officer thereof acting in his official capacity.

Be it provided, however, that for the purposes of this Act, any person or association of persons, corporate or otherwise, holding a lease from the State of Texas under the provisions of Chapter 377, Acts of the 57th Legislature, Regular Session, 1961 (Article 5415e, Revised Civil Statutes of Texas), shall be treated as an owner of such land and shall be entitled to excavate, take, remove, and carry away sand, marl, gravel, or shell for the purposes set forth in this Section without first obtaining a permit from the commissioners court.

SEC. 8. Nothing in this Act shall be construed to repeal or modify the provisions of Chapter 3, Title 67, Revised Civil Statutes of Texas, as amended, as it relates to the powers and duties of the Parks and Wildlife Department with respect to all matters pertaining to the sale, taking, carrying away, or disturbing of sand, marl, gravel, or shell of commercial value, and all gravel, shells, mud shell, and oyster beds and their protection from free use and unlawful disturbing or appropriation as provided in said Chapter 3; nor shall anything in this Act be construed to create any additional or supplemental requirements or procedures to those set forth in the said Chapter 3, Title 67, insofar as the matters therein involved are concerned.

SEC. 9. No permit shall be assignable without the approval of the commissioners court, and a failure or refusal of the holder to comply with the terms and the conditions of such permit shall operate as an immediate termination and revocation of all rights conferred therein or claimed thereunder.

SEC. 10. The commissioners court shall give public notice of all applications received for permits to excavate, take, remove, or carry away sand, marl, gravel, or shell. Such notice shall be published once in a newspaper of general circulation in the county, and shall include the name of the applicant and the location and dimensions of the proposed activity. A public hearing shall be held by the commissioners court in any case in which such is requested by any citizen within ten days after such publication. Notice of such public hearing shall be published at least once a week for at least two weeks in a newspaper of general circulation in the county, and such hearing may not be held less than thirty days from the date of the first such publication.

SEC. 11. For the purposes of this Act, "public beach" shall mean that beach area, whether publicly or privately owned, to which the public has acquired the right of access, either by statute, prescription, dedication, or by retaining a right by virtue of continuous right in the public, including but not limited to that area extending from the line of mean low tide bordering on the Gulf of Mexico to the line of vegetation bordering on the Gulf of Mexico, or to a line 200 feet inland from the line of mean low tide, whichever shall be nearer the line of mean low tide, in the event the public has acquired a right of use or easement to or over such area by prescription, dedication, or has retained a right by virtue of continuous right in the public.

SEC. 12. This Act shall not apply to any island or peninsula that is not accessible by a public road or common carrier ferry facility, so long as such condition shall exist.

SEC. 13. The Attorney General, any County Attorney, District Attorney, or Criminal District Attorney of the State of Texas is hereby authorized and empowered, and it shall be his, or their duty to file in the District Court of the



county where such conduct is taking place, actions seeking either temporary or permanent court orders or injunctions to prohibit any excavation, taking, removing, or carrying away any sand, marl, gravel, or shell from any land located on any exposed island or peninsula bordering on the Gulf of Mexico, or from land located within 1500 feet of any public beach of this state, where such land is situated outside the boundaries of any incorporated city, town, or village, in violation of the provisions of this Act.

SEC. 14. Whoever shall, for himself, or for or on behalf or or under the direction of another person, or association of persons, corporate, or otherwise, excavate, take, remove, or carry away any sand, marl, gravel, or shell from any land located on any exposed island or peninsula bordering on the Gulf of Mexico, or from land located within 1500 feet of any public beach of this state, where such land is situated outside the boundaries of any incorporated city, town, or village, in violation of the provisions of this Act, shall be fined not less than \$10 nor more than \$200. Each day's operation shall constitute a separate offense.

SEC. 15. The importance of this legislation and the crowded condition of the calendars in both Houses create an emergency and an imperative public necessity that the Constitutional Rule requiring bills to be read on three several days in each House be suspended, and said Rule is hereby suspended; and that this Act take effect and be in force from and after its passing, and it is so enacted.

Passed the Senate on September 6, 1969: Yeas 27, Nays 2; September 9, 1969,

Senate concurred in House amendment by a viva voce vote; passed the House on September 8, 1969, with amendment: Yeas 131, Nays 3.

Approved Sept. 19, 1969.

Effective Dec. 8, 1969, 90 days after date of adjournment.

#### GULF COAST COUNTIES—BEACH PARK BOARDS—POWERS

##### CHAPTER 20<sup>5</sup>

##### S. B. No. 19

AN ACT Providing for the creation of beach park boards in counties bordering on the Gulf of Mexico; providing certain exceptions; describing the duties and powers of such boards; making this Act cumulative of all other acts relating to county parks; providing for the autonomy of city beach park boards; providing for severability; reiterating rights, authority, and limitations delegated by Chapter 19, Acts of 56th Legislature, 2nd Called Session, 1959, as amended; and declaring an emergency

*Be it enacted by the Legislature of the State of Texas:*

SECTION 1. This Act shall apply to counties which are situated or border upon the Gulf of Mexico and have within their boundaries beaches which are suitable for park purposes. The suitability of such beaches for park purposes shall be conclusively established when the commissioners court of any such county shall have made a finding that a beach or beaches located within its boundaries but not located within the boundaries of any incorporated city are suitable for park purposes.

This Act shall not apply to any island or peninsula that is not accessible by a public road or common carrier ferry facility, so long as such condition shall exist.

Be it further provided, that nothing in this Act shall ever be construed to interfere with, pre-empt, or in any other manner restrict or usurp the authority of the General Land Office over state-owned beaches.

SEC. 2. Any such county, for the purposes of improving, equipping, maintaining, financing, and operating any such public park or parks, or any facilities owned by such county, or to be acquired by such county, or to be managed by such county under the terms of a written contract, may, after a favorable majority vote of the qualified voters of the county voting at an election held on such proposition, create a board to be designated "Beach Park Board of Trustees," hereinafter sometimes in this Act referred to as the "board." Any such board shall have the powers authorized in and shall perform the duties specified in this Act. Such election shall be called by the commissioners court and notice thereof shall be given in the manner provided by Chapter 1, Title 22, Revised Civil Statutes of Texas, 1925, as amended. The ballots shall contain the following proposition: "FOR Establishing a Beach Park Board of Trustees" and the contrary thereof.

SEC. 3. The Beach Park Board of Trustees shall be composed of seven members

<sup>5</sup> Vernon's Ann. Civ. St. art 5415d—3, §§ 1—11.

appointed by the commissioners court, one of whom shall be a member of the commissioners court. Such trustees shall serve for a term of two years from the date of their appointment and any vacancies shall be filled by appointment of the commissioners court; provided that three trustees first appointed shall serve for one year and four shall serve for two years; the original term of each trustee to be designated by the commissioners court. Each trustee shall serve without compensation but shall be reimbursed for all necessary expenses, including traveling, incurred in the performance of his official duties.

SEC. 4. Each trustee so appointed shall within 15 days after his appointment qualify by taking the official oath and by filing a good and sufficient bond with the county clerk of such county, payable to such county and approved by the commissioners court thereof. Such bond shall be in such sum as approved by the commissioners court of such county, but in no event shall it exceed \$5,000. Such bond shall be conditioned upon the faithful performance of the duties of such trustee, including his proper handling of all moneys that may come into his hands in his capacity as a member of the Beach Park Board of Trustees, the cost of such bond to be paid by the board.

SEC. 5. At the time of the appointment of the first trustees, the commissioners court shall designate one of the trustees as chairman of the board, who shall serve in that capacity for a period of one year, and annually thereafter the board shall elect a chairman from among its members. The board shall also elect annually from among its members a vice-chairman, a secretary, and a treasurer and the office of secretary and treasurer may be held by the same person. The board shall hold regular meetings at times to be fixed by the board and may hold special meetings at such times as business or necessity may require, which special meetings may be called by the chairman or any three members of the board. The money belonging to or under control of the board shall be deposited and shall be secured in the same manner prescribed by law for county funds.

SEC. 6. The board shall keep a true and full record of all its meetings and proceedings and preserve its minutes, contracts, accounts, and all other records in a fireproof safe or vault. All such records shall be the property of the board and shall be subject to inspection by the commissioners court of such county at all reasonable times. The board may contract with the commissioners court of such county to have the county keep and maintain its records. An annual audit by independent auditors selected by the board shall be made of all financial transactions and records of the board.

SEC. 7. All lands used as parks in connection with public beaches but not located within the boundaries of any incorporated city and not within the area bordering on the Gulf of Mexico from the line of mean low tide to the line of vegetation as that term is defined in Chapter 19, Acts of the 56th Legislature, 2nd Called Session, 1959, as amended (Article 5415d, Revised Civil Statutes of Texas), and all public beaches owned in fee by the county, shall be under the jurisdiction of the board. The commissioners court of such county may designate any additional parks and facilities owned by the county, or to be managed by the county under the terms of a written contract, to be under the management and control of the board. In addition to the powers and authority herein granted, the board shall have and exercise the following powers and authority:

(a) To manage, operate, maintain, equip, and finance any and all existing public parks placed under its jurisdiction by the commissioners court;

(b) To improve, manage, operate, maintain, equip, and finance additional parks acquired by gift, but not by the exercise of the power of eminent domain;

(c) To accept, receive, and expend gifts of money or other things of value from any person, group of persons, corporation, or association for the purpose of performing any function, power or authority herein invested in the board;

(d) To advertise the county's recreational advantages for the purposes of attracting tourists, residents, and other users of the public facilities operated by the board;

(e) To accept and receive from the county and to expend such funds as may be appropriated by the county from time to time for the purpose of improving, equipping, maintaining, operating, and promoting recreational facilities under the board's supervision and control;

(f) To enter into contracts, leases, or other agreements connected with or incident to or in any manner affecting the financing, construction, equipping, maintaining, or operating all facilities located or to be located on or pertaining to any lands under its jurisdiction, or any facilities under its control, and to execute and perform its lawful powers and functions on lands leased from others;

(g) To have general power to make and enter into all contracts, leases, and agreements with persons, associations, and corporations relating to the management, operation, and maintenance of any concession, facility, improvement, leasehold, lands, or other property of any nature whatsoever over which such board shall have jurisdiction and control; provided that the board shall not enter into any such lease or agreement for a longer term than 40 years;

(h) To adopt, promulgate, and enforce all reasonable rules and regulations for the use of parks and facilities under the jurisdiction and control of the board by the public or by lessees, concessionaires, and other persons or corporations carrying on any business activity within the area of such public parks and facilities;

(i) To employ secretaries, stenographers, bookkeepers, accountants, technical experts, and other such agents and employees, permanent or temporary, as it may require, and shall determine their qualifications, duties, and compensation. In addition, the board may also employ and compensate a manager for any parks or facilities and may give him full authority in the management and operation of the park or parks or facilities subject only to the direction and orders of the board. For such legal services as it may require the board may call upon the county attorney of such county and in lieu thereof or in addition thereto the board may employ and compensate its own counsel and legal staff. The board shall adopt a seal which shall be placed on all leases, deeds, and other instruments which are usually executed under seal, and on other such instruments as may be required by the board;

(j) To sue and be sued in its own name;

(k) To expend any moneys appropriated by the commissioners court for the purpose of cleaning and maintaining lands within its jurisdiction and public beaches including any moneys appropriated to the commissioners court by the State of Texas for such purpose;

(l) To issue revenue bonds in the name of the board which shall be payable solely from the revenues of all or any designated part or parts of the properties or facilities under the jurisdiction and control of the board, for the purpose of improving and enlarging public parks and facilities. Such bonds may be issued in one or more installments or series by resolutions adopted by the board without the necessity of an election, shall bear interest at a rate not to exceed six percent per annum, shall mature serially or otherwise within 40 years from their date or dates, shall be sold by the board on the best terms obtainable but not for less than par and accrued interest, shall be executed by the chairman and secretary of the board, shall be signed by the chairman and the secretary of the board, or shall bear the facsimile signature of either or both, shall display the seal of the board either impressed, printed, or lithographed thereon, shall not be delivered until a transcript of the proceedings authorizing their issuance has been submitted to the Attorney General of Texas and by him approved as to legality and the bonds registered by the Comptroller of Public Accounts of the State of Texas, and shall be issued upon such terms and conditions in regard to the security, manner, place and time of payment, pledge of designated revenue, redemption before maturity, and the issuance of additional parity or junior lien bonds as the board shall specify in the resolution or resolutions authorizing such bonds. All bonds issued under the provisions of this Act are hereby declared to be legal and authorized investments for banks, saving banks trust companies, building and loan associations, insurance companies, fiduciaries, trustees, guardians, and for the sinking funds of cities, towns, villages, counties, school districts, or other political corporations or subdivisions of the State of Texas. Such bonds shall be eligible to secure the deposit of any and all public funds of the State of Texas, and any and all public funds of cities, towns, villages, or other political corporations or subdivisions of the State of Texas, and such bonds shall be lawful and sufficient security for said deposits to the extent of their face value when accompanied by all unmatured interest coupons appurtenant thereto;

(m) The board shall not have the power or authority to issue any bonds payable in whole or in part from ad valorem taxes but shall be authorized to receive and expend the proceeds of any bonds payable from taxes which may be issued by the governing body of the county for park purposes after the same have been authorized at an election held in the manner required by law;

(n) To issue refunding bonds for the purpose of refunding one or more series or installments of original or refunding revenue bonds of the board



outstanding which refunding bonds shall be issued, approved as to legality by the Attorney General of Texas, and registered by the Comptroller of Public Accounts of Texas, in the manner and upon the terms and conditions prescribed for the issuance of original revenue bonds herein, such refunding bonds to bear interest at a rate or rates not exceeding that herein provided for the original bonds;

(o) To enter into contracts with adjacent counties, with Beach Park Boards in adjacent counties, and with Beach Park Boards in any city of the same county as the board, to accomplish any of the purposes authorized by this Act;

(p) To charge and collect a reasonable fee for access or entrance to, or parking upon, any lands under its jurisdiction other than public beaches owned by the county, or for the use of any facility located on land under the jurisdiction of the board.

SEC. 8. The board shall have no jurisdiction over any public beach situated within the boundaries of such county which has been designated a national park, national seashore, or state park.

SEC. 9. This Act shall be cumulative of all other laws relating to county parks but this Act shall take precedence in the event of conflict. Specifically, the powers and authorities of the Beach Park Board of Trustees preempts the right of the county Board of Park Commissioners to act with regard to any beach, park, or facility within the jurisdiction of the Beach Park Board of Trustees.

SEC. 10. The provisions of this Act shall not be construed as prohibiting the creation of, or limiting the lawful actions of, any Beach Park Board of Trustees of any home-rule city as provided for in Article 6081g—1, Vernon's Texas Civil Statutes.

SEC. 11. Nothing in this Act shall be construed to permit any interference whatsoever with any right the public might otherwise have under the provisions of Chapter 19, Acts of the 56th Legislature, 2nd Called Session, 1959, as amended (Article 5415d, Vernon's Texas Civil Statutes), to the free and unrestricted use of, and to ingress and egress to, the area bordering on the Gulf of Mexico from mean low tide to the line of vegetation as that term is defined in Chapter 19, Acts of the 56th Legislature, 2nd Called Session, 1959, as amended (Article 5415d, Vernon's Texas Civil Statutes), and such rights in the public shall persist as if this Act had not been passed. No county nor county officials nor anyone acting under authority of this Act shall exercise any authority, contract out any right to exercise authority or otherwise delegate authority beyond that specifically granted to it in Section 8 of Chapter 19, Acts of the 56th Legislature, 2nd Called Session, 1959, as amended (Article 5415d, Vernon's Texas Civil Statutes), over such area notwithstanding any of the specific provisions of this Act. It is the intent of the Legislature in passing this Act that the rights established or recognized in Chapter 19, Acts of the 56th Legislature, 2nd Called Session, 1959, as amended (Article 5415d, Vernon's Texas Civil Statutes), are to be paramount over any rights or interests which might otherwise be deemed created by this Act, and nothing herein shall trench upon those rights nor encroach upon lands, or interests in land, which may ultimately be held subject to those rights.

SEC. 12.<sup>a</sup> In the event any one or more of the sections or provisions of this Act, or the application of such sections or provisions to any situation, circumstances, or person, shall for any reason be held to be unconstitutional, such unconstitutionality shall not affect any other sections or provisions of this Act or the application of such sections or provisions to any other situation, circumstances, or persons, and it is intended that this Act shall be construed as if such sections or provisions had not been included herein for any constitutional application.

SEC. 13. The importance of this legislation and the crowded condition of the calendars in both Houses create an emergency and an imperative public necessity that the Constitutional Rule requiring bills to be read on three several days in each House be suspended, and this Rule is hereby suspended; and that this Act take effect and be in force from and after its passage, and it is so enacted.

Passed the Senate on September 6, 1969: Yeas 29, Nays 0; passed the House on September 8, 1969: Yeas 132, Nays 8.

Approved Sept. 19, 1969.

Effective Sept. 19, 1969.

<sup>a</sup> Vernon's Ann. Civ. St. art. 5415d—3 note.

## STATE-OWNED LANDS AND ISLANDS—SALE OR LEASING—MORATORIUM

CHAPTER 21<sup>7</sup>

## S. B. No. 20

AN ACT Declaring a moratorium on the sale or leasing of the surface estate in state-owned submerged lands, beaches, and islands under any existing laws of this state, pending receipt of the Interagency Natural Resources Council study of these submerged lands, beaches, and islands or until May 31, 1973, whichever is earlier; providing certain exemptions; and declaring an emergency

*Be it enacted by the Legislature of the State of Texas:*

SECTION. 1. Pending delivery of the final report of the Interagency Natural Resources Council to the Legislature covering its comprehensive study and recommendation concerning the state's submerged lands, beaches, islands, estuaries, and estuarine areas pursuant to S. C. R. No. 38 of this 61st Legislature, or until May 31, 1973, whichever date shall first occur, there is hereby declared a moratorium and suspension of the sale or leasing of, and of the establishment of any bulkhead line on, the surface estate of any state-owned submerged lands, beaches, and islands for any purpose under any existing law of this state.

Be it provided, however, that this moratorium shall not apply to any application for a lease of state-owned submerged lands or islands under the provisions of Chapter 377, Acts of the 57th Legislature, Regular Session, 1961, where the submerged lands or islands sought to be leased are within 2500 feet of submerged lands or islands already under lease to the applicant pursuant to the terms of Chapter 377, Acts of the 57th Legislature, Regular Session, 1961.

It is further provided that this Act shall not be construed to repeal, modify, or suspend the provisions of Chapter 3, Title 67, Revised Civil Statutes of Texas, as amended, as it relates to the powers and duties of the Parks and Wildlife Department with respect to all matters pertaining to the sale, taking, carrying away, or disturbing of marl, sand, gravel, or shell of commercial value, and all gravel, shells, mud shell, and oyster beds and their protection from free use and unlawful disturbing or appropriation as provided in said Chapter 3.

Be it provided, however, that this Act shall not apply to any island or peninsula that is not accessible by a public road or common carrier ferry facility, so long as such condition shall exist.

SEC. 2.<sup>8</sup> The facts that the state-owned submerged lands, islands, estuaries, and estuarine areas in the Texas Gulf Coast Area, including the submerged lands of the state seaward of the mean of lower low water marks in the Gulf of Mexico, and the natural resources and the environmental natural beauty with which they are so richly endowed, constitute an important and valuable property right belonging to the Public Free School Fund and to all of the people of Texas, and they are of immediate and potential value to the present and future generations of Texans;

That it is the declared policy of the state that such submerged lands, islands, estuaries, and estuarine areas shall be so managed and used as to insure the conservation, protection, and restoration of such submerged lands, islands, estuaries, and estuarine areas with resources and natural beauty and, consistent with such protection, conservation and restoration, their development and utilization in a manner that adequately and reasonably maintains a balance between the need for such protection in the interest of conserving the natural resources and natural beauty of the state and the need to develop these submerged lands, islands, estuaries, and estuarine areas to further the growth and development of the state;

That the people of the State of Texas have a primary interest in the correction and prevention of irreparable damage to or unreasonable impairment of the uses of the coastal waters of the state and inland waters of the state in such estuaries and estuarine areas caused by drainage, waste water disposal, industrial waste disposal, and all other activities that may contribute to the contamination and pollution of such waters;

That the people of the State of Texas also have primary interests in the value of such lands, islands, estuaries, and estuarine areas as public property for production and marketing of oil and gas and other minerals and mineral resources, for the production of living resources, for shell and other fisheries and fishing, hunting, and other recreation, for wildlife conservation, and for health and other uses in which the public at large may participate and enjoy;

<sup>7</sup> Vernon's Ann. Civ. St. art. 5415f, § 1.

<sup>8</sup> Vernon's Ann. Civ. St. art. 5415f note.

That it is also the declared policy of this state that the public, individually and collectively, shall have the free and unrestricted right of ingress and egress to and from the state-owned beaches bordering on the seaward shore of the Gulf of Mexico and hence the people of the State of Texas have a further primary interest in conserving the natural beauty of the state's beaches and protecting and conserving them for the use of the public;

That the Interagency Natural Resources Council has been directed by the Legislature to make a comprehensive study to prepare the way for constructive legislation for the present and future protection of the interest of the people of the State of Texas in such submerged lands, beaches, islands, estuaries, and estuarine areas; and

That the purpose, intent, and effectiveness of such constructive legislation for the present and future protection of the people of the State of Texas cannot be achieved if the sale and leasing of the state-owned submerged lands, beaches, and islands is continued under the existing laws of this state without regard to detailed modern scientific knowledge of these submerged lands, beaches, and islands which will result from the Council study and before such information can be collected and finally reported to the Legislature,

All create an emergency and an imperative public necessity that the Constitutional Rule requiring bills to be read on three several days in each House be suspended, and this Rule is hereby suspended; and that this Act shall take effect and be in force from and after its passage, and it is so enacted.

Passed the Senate on September 6, 1969 : Yeas 29 ; Nays 0 ; passed the House on September 8, 1969 : Yeas 134, Nays 4.

Approved Sept. 19, 1969.

Effective Sept. 19, 1969.

---

NOSSAMAN, WATERS, SCOTT, KRUEGER & RIORDAN,  
Los Angeles, Calif., November 18, 1969.

HON. ALTON LENNON,  
*Chairman, Subcommittee on Oceanography, Committee on Merchant Marine and Fisheries,*  
*House of Representatives, Washington, D.C.*

DEAR MR. LENNON: I am a member of the California Advisory Commission on Marine and Coastal Resources and was one of its representatives at the recent Congressional Conference on Coastal Zone Management sponsored by your Subcommittee. During the discussion following the presentations made on October 28, 1969, in Panel 5, I made an abbreviated statement to call attention to the fact that the definition of "coastal zone" contained in the proposed House legislation (now H.R. 14730 and 14731) as well as S. 2802 would be limited to lands within the boundaries of the coastal states and would exclude some areas in which certain coastal states have a strong and legitimate concern. With due regard to the fact that limitations of time prevented me from adequately covering this concept at the Conference, your Subcommittee Counsel, Thomas A. Clingan, Jr., invited me to do so by letter to you. I am happy to further treat the matter here.

As you undoubtedly are aware, the 1965 decision of the U.S. Supreme Court in *United States v. California*, 381 U.S. 139, held that the lands confirmed unto the State of California by the Submerged Lands Act of 1953 did not include San Pedro Bay, the Santa Barbara Channel, Santa Monica Bay and other lands lying between the Channel Islands off California and the mainland. This result led to the sale of Federal oil and gas leases in the Santa Barbara Channel early in 1968 and the subsequent drilling of offshore exploratory and development wells which included the illfated Union Oil Company A-21 well with its vast spillage of oil. A strong and valid case can be made that, notwithstanding the holding in the 1965 *California* case, the State of California has an interest in actively participating in the planning of areas under Federal jurisdiction lying between the Channel Islands, which are within the boundaries of the State, and the mainland. Santa Catalina Island, for example, lies less than 25 miles from the City of Los Angeles and is within the political jurisdiction of the County of Los Angeles. It is quite likely that broadscale development of the Island and offshore areas under the jurisdiction of the State of California will be undertaken within the next few years which will directly affect the Federal offshore lands. In the same fashion, the use of Federal lands for mineral development or other uses will strongly affect the development of the lands lying within the jurisdiction of the State. The interrelationship between Federal and State lands in this area is illustrated by accompanying Resolution R-VI-1 of the California



Advisory Commission on Marine and Coastal Resources regarding oil pollution and offshore drilling in the Santa Barbara Channel.

This problem at present may be peculiar to Southern California with due regard to the highly urbanized nature of its coastline and the press of interest for diverse offshore uses. It is quite likely, however, that the same type of boundary situation will be established in other areas, such as Alaska, Louisiana and the Atlantic Coast states, where titles have not now been stabilized to the extent that they have with respect to California, which could give rise to the same problem in these other areas.

All of the bills examined in effect reserve to the Federal Government the right to review and approve or disapprove the State's management program for its coastal zone. Further, to include in a State's coastal zone lands over which the Federal Government has jurisdiction and control need not require the transfer or release of any right reserved to the Federal Government under the Submerged Lands Act or any right to dispose of an interest in natural resources under the Outer Continental Shelf Lands Act of 1953. H.R. 14731 defines coastal zone to include: "the land, waters and lands beneath the waters in close proximity to the coastline (including the Great Lakes) and strongly influenced by each other, including the estuary and its transitional areas. Transitional areas include areas influenced or affected by water from an estuary such as, but not limited to, salt marshes, coastal and intertidal areas, sounds, embayments, harbors, lagoons, inshore waters, and channels." (Section 302(b)). Sections 306 (2) and (3) of H.R. 14730 contain a similar definition.

It would be quite reasonable to include in both of such proposed statutes provisions establishing the right of the Federal Government to approve the inclusion of additional areas under Federal jurisdiction in a State's coastal zone where it is determined that there is an interrelationship between the areas in question which would justify this action. For this purpose, a sentence reading in substance as follows might be added to the end of existing Section 302(b) of H.R. 14731: "The coastal zone will normally include only those areas within the boundaries of coastal States, but the Secretary may approve the inclusion of other areas under Federal jurisdiction and control where he determines them to have a special functional interrelationship with lands within the boundaries of the coastal State or States affected which would justify this action in light of the purposes set forth in Section 303 hereof. The inclusion of any such Federal lands within the coastal zone of a State or States shall not convey or diminish any rights reserved or possessed by the Federal Government under the Submerged Lands Act of 1953 or the Outer Continental Shelf Lands Act of 1953." Note in this regard the similarity between this concept and that set forth in accompanying Resolution R-V-2 of the California Advisory Commission on Marine and Coastal Resources regarding California's inventory of coastal lands for the preparation of its General Ocean Area Plan. Note also that no change of substance would seem to be required in H.R. 14731 in view of existing provisions requiring that the interests of the Federal Government be considered in any management plan developed by a State for its coastal zone. Subsection (3)(b) of Section 305(b) requires the coastal State to adopt "a management plan for its coastal zone \* \* \* containing \* \* \* [provisions for] identification and recognition of the National, State, and local interests in the preservation, use, and development of the coastal zone." Subsection (3)(g) of the same Section requires that the coastal State make "[p]rovision for due recognition of the rights and interests of other States and the Federal Government." The above recommended amendment would also appear appropriate for inclusion in Section 306 of H.R. 14730 with some changes in terminology.

Both of the bills which you and Mr. Mosher have introduced on the subject reveal a commendable awareness of the need for taking into account the political framework established by the Submerged Lands Act between the Federal Government and that of the various coastal States and appear to give appropriate recognition to the interests of the State within that framework. To do otherwise would not appear justified as I indicated during the debate at the October 28 session of your very worthwhile Conference.

I greatly appreciated the opportunity to participate with you and your colleagues and the representatives of other States in the exchange of ideas upon the very important subject of coastal zone management. We in the coastal States are grateful to your Subcommittee and Committee for taking the initiative to hold this very well planned Congressional Conference on this subject.

Respectfully submitted,

ROBERT B. KRUEGER.

PROCEEDINGS OF THE SIXTH MEETING OF THE CALIFORNIA ADVISORY COMMISSION  
ON MARINE AND COASTAL RESOURCES

*Recommendations and Resolutions Adopted by the Commission*

Pursuant to the several topics of the agenda and based on the deliberations as recorded in the Proceedings, the Commission adopted the following recommendations and resolutions:

R-VI-1: CONCERNING OIL POLLUTION AND OFFSHORE DRILLING IN THE SANTA  
BARBARA CHANNEL

The Commission recommends:

(1) California's Comprehensive Ocean Area Plan (COAP) be pushed to completion with all possible speed, and that those parts dealing with the Santa Barbara Channel, Channel coastline, Channel Islands, and the sea bed between those islands and the coast be completed first and issued separately as preliminary working documents.

(2) The State take the initiative in negotiating joint Federal and State studies on the multiple use of the Santa Barbara Channel, Channel coast and Channel Islands, and the sea bed between those islands and the coast.

(3) The State initiate plans with all interested parties, and particularly the Federal Government, for a Santa Barbara Channel Multiple Use Conference to be held when Items 1 and 2 above are completed.

(4) The Commission endorse the State of California, Resources Agency "Report of the Ad Hoc Committee, State Regulations and Practices, Oil and Gas Operations and Pollution, June 1969," and commend its officials for adoption of the report by the State.

(5) The State take the following factors into consideration in dealing with petroleum production off California:

(a) the protection of offshore groundwater storage, and

(b) the protection of underwater state parks and ensurance of the compatibility of offshore exploitation and development with such parks.

(6) The Commission change its previous recommendation for delay in further drilling in the Repetto formation and state that, having insufficient information to come to an independent judgment on the question, expresses its confidence in the President's appointment of the Dubridge Committee and in its members, and based on their competence expresses its confidence in their recommendations.

(7) Further oil and gas leasing of Federal offshore lands in the Channel be postponed at least until the conference referred to in 3 above is held.

(8) Further new oil and gas leases and production therefrom from State owned offshore Channel lands be similarly postponed.

(9) Pending the completion of the studies recommended in 1, 2, and 3 above, further testing of underwater completion systems shall be encouraged.

RESOLUTION OF THE CALIFORNIA ADVISORY COMMISSION ON MARINE AND  
COASTAL RESOURCES

R-V-2: CONCERNING THE INVENTORY OF COASTAL LANDS OF THE STATE OF CALIFORNIA

The Commission recommends:

That the definition of the coastal zone for the purpose of this inventory be—"the coastal zone includes publicly and privately owned lands inland to a variable distance from beaches and margins of bays and estuaries but normally does not extend further than the highest elevation in the nearest coastal mountain range. It further includes tide and submerged lands lying seaward to a variable distance from the beaches but normally does not extend further seaward than the outermost limit of the State's boundaries. The variable distance is to be designated after advice from consultants taking into account all geographical, geological, biological, social and industrial characteristics tending to create an inter-relationship between any area being considered for inclusion in the coastal zone and the activities and interests of the State and the nature and extent of that inter-relationship."



## BIOGRAPHICAL RÉSUMÉ OF ROBERT B. KRUEGER

Partner in the Los Angeles law firm of Nossaman Waters, Scott, Krueger & Riordan and the Project Director for the 1968 study conducted by that firm for the Public Land Law Review Commission on the Outer Continental Shelf Lands of the United States.

Member of the California Advisory Commission on Marine and Coastal Resources and the Advisory Council of the Institute of Marine Resources (University of California). Former member of the Governors' Advisory Commissions on Ocean Resources under Governor Reagan and Ex-Governor Brown. Chairman of the American Bar Association Committee on Marine Resource Liaison and former Chairman of the Committee on Marine Resources of the ABA Section of Natural Resources Law. Program Chairman of the 1967 ABA National Institute of Marine Resources. Member of ABA Committee on Federal Navigation Servitude.

Member Panel on Resources of the Deep Ocean Floor of the American Society of International Law, the International Law Association and the Committee on Oceanography of the ABA Section of International and Comparative Law.

Education: A.B., University of Kansas, 1949; J.D., University of Michigan, 1952.

## MARINE RESOURCES BIBLIOGRAPHY OF ROBERT B. KRUEGER

"State Tideland Leasing in California," 5 U.C.L.A. Law Review 427 (1958).

"Governmental Control of Beaches and Tidelands," 34 Journal of the American Shore and Beach Preservation Association 33 (1966).

"Mineral Development on the Continental Shelf and Beyond," 42 California State Bar Journal 515 (1967).

"The Convention on the Continental Shelf and the Need for Its Revision and Some Comments Regarding the Regime for the Lands Beyond," 1 ABA Natural Resources Lawyer (vol. 3) 1 (1968).

"The Development and Administration of Outer Continental Shelf Lands of the United States," 14th Annual Rocky Mountain Mineral Law Institute Proceedings 634 (1968).

Study of Outer Continental Shelf Lands of the United States for the Public Land Law Review Commission (October, 1968), Project Director.

"The Outer Continental Shelf Lands—An Evaluation," Louisiana State University Mineral Law Institute (March, 1969).

"The State of International Law as Applied to Ocean Mining and an Examination of the Offshore Mining Laws of Selected Nations," I Offshore Technology Conference 333 (1969).

"Legal Aspects of the Construction of Coastal and Offshore Structures," American Society of Civil Engineers, Chicago, Illinois (October 17, 1969).

(Whereupon, at 4:15 p.m. the committee adjourned, subject to call.)





ves  
heries

ence. Hearing  
phy, October  
ssion, Serial  
1.

